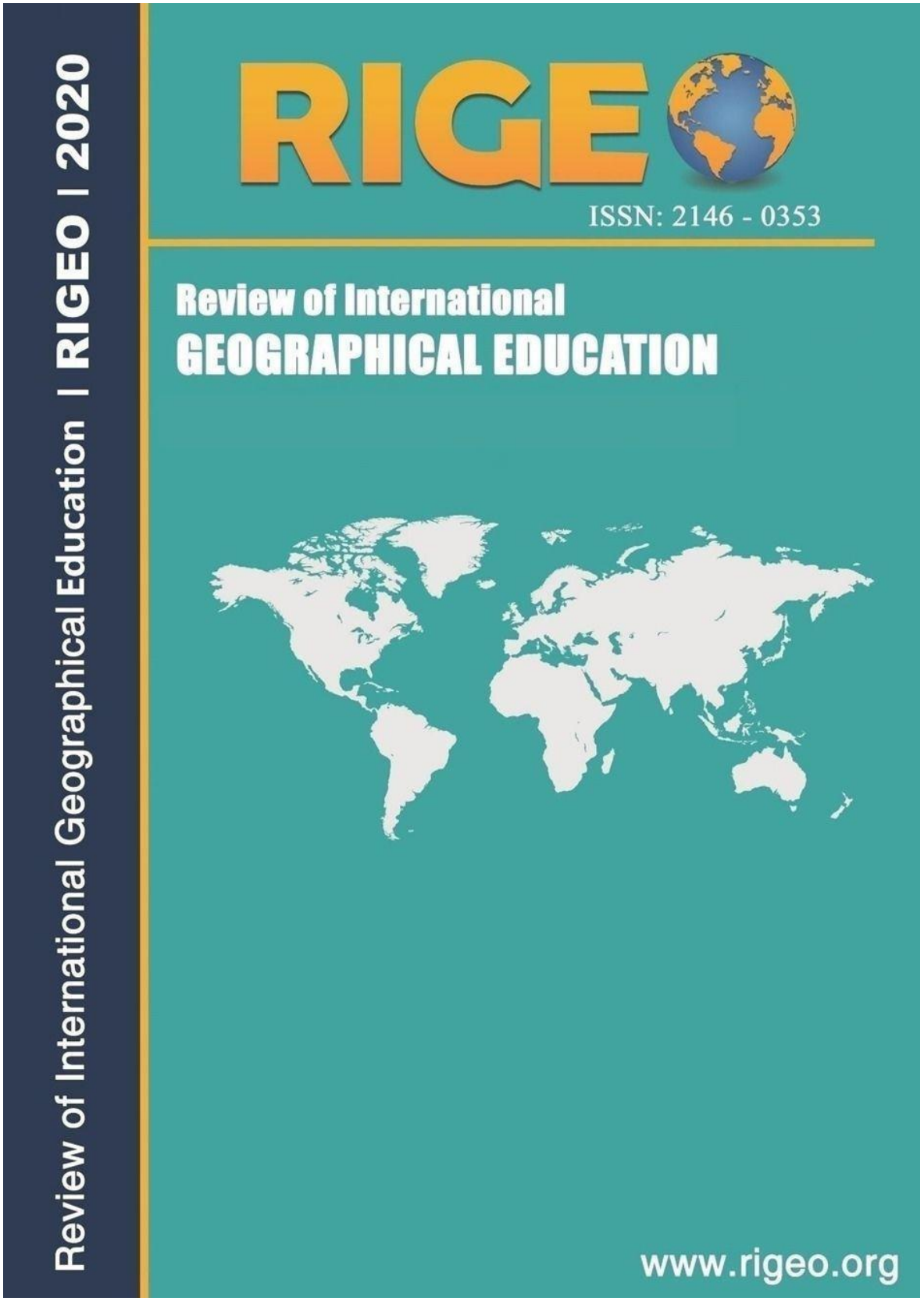
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Source Types and Selection Criteria for Undergraduates' Use of Online Information in World Geography

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Abstract

In addition to more conventional resources, such as textbooks, students may benefit greatly from the wealth of current knowledge and varied viewpoints found on the internet. Students' source types and the criteria they use to evaluate the value of online material are studied in this article, which is part of a course assignment. Sixty-five first-year college students taking a global geography course in the autumn of 2015 were given a Google search for "oil price changes" and then asked to select the 20 websites they found most helpful in comprehending the subject. The research will help teachers better understand how their pupils may make responsible use of the internet for both schoolwork and personal development.

Keywords

Online Resources; Information Literacy; Undergraduate Students; World Geograph

INTRODUCTION:

We are living in an information-rich era where fresh data is created and shared at a rapid pace, and where a wealth of knowledge is readily available to everyone with an internet connection. Teaching and generating learning materials should always have access to this internet information since it may be valuable (Reed & Mitchell, 2001; Stewart, Stott, & Nuttall, 2011). Eynon (2005), Kirkwood (2008), Lee, Paik, & Joo (2012), Maloney (2007), and Selwyn (2008) all attest to the fact that online information—which encompasses a vast array of internet-based resources—is heavily used in the realm of higher education. Teachers may complement classroom instruction using internet resources or assign students to do the same for class projects and research papers. Some students independently seek out more information about a course subject online.

Despite the wide variety of topics covered in geography classes, any class that addresses current events on a local or worldwide basis may benefit greatly from

using internet resources. One frequent goal of world geography courses is to help students comprehend and assess contemporary global challenges from a geographical perspective; hence, including online material may be beneficial to these classes (Jo, Hong, & Verma, 2016; Klein, 2003). Rapid data and information obsolescence and a lack of different viewpoints are common problems in international geography textbooks (Rees & Legates, 2013; Wong, 1998). The opposite is true; current events and other viewpoints may be quickly and easily researched online. As a result, students and teachers of international geography may benefit from using internet knowledge sources.

Ritter and Lemke (2000) state that students are more likely to actively participate in class when they use the internet to research topics beyond what is already provided. Students can engage in student-centered learning and build meaningful knowledge through activities and assignments that incorporate online information in a world geography course. For example, students can research a specific country or use local news to illustrate a global issue (Klein, 2003; Steinberg, Walter, & Sherman-Morris, 2002). Students may also find and comprehend geographical ideas and processes via the use of various web resources, including pictures, maps, and videos (McMorrow, 2005). This is why a number of geographers have advocated for and implemented the use of internet resources as pedagogical tools in the classroom.

Online content consumption alone, however, cannot ensure that students' learning will be enhanced (Ritter & Lemke, 2000). Many geographers have stressed the importance of students learning to effectively and educationally use the internet for research since the internet is so pervasive in higher education (Bullard, 1998; Castleford and Robinson, 1998; Chrisman & Harvey, 1998; Newnham et al., 1998). In addition, Goett and Foote (2000) emphasised the significance of teaching students how to evaluate the credibility of geographical information found online. This involves teaching them to look at things like the source's date of release, purpose, author or publisher, referenced sources, and other sources of information. In higher education, there have been numerous suggestions and implementations of methods for teaching students these skills, such as having librarians visit as guest lecturers, providing formal and informal workshops, and offering credit and non-credit courses in online information (Johnston & Webber, 2003; McDowell, 2002).

In order to complete class projects and assignments, students are often required to research course topics online. Consequently, looking at whether pupils possess the

Assisting pupils in comprehending and acquiring subject knowledge relies on their capacity to choose relevant internet material. The habits and practices of students while choosing material online have piqued the attention of researchers from many different disciplines (Hsu et al., 2014; Kirkwood, 2008; Leeder & Shah, 2016). The authors Stewart, Stott, and Nuttall (2011) looked at the correlations between students' habits of using the internet and their grades in two UK undergraduate geography classes. According to the findings, the vast majority of students only consult appropriate internet resources in order to

do their homework or study for tests. When offered the opportunity to access online resources as supplemental or suggested reading, very few pupils actually did so. To rephrase, students gave resources high priority and only accessed them when absolutely required for classwork or tests. So, if students are going to rely heavily on online resources for completing course assignments and tests, the authors argue that teachers should include this need into course design from the start. Similarly, Kirkwood (2008) discovered that students seldom utilised optional sources of internet material and were only encouraged or forced to use it for evaluation purposes. When doing research for an exam or project, how do students decide which web resources to use? With this research, we want to better understand how undergraduates in a global geography course choose to use the internet for academic purposes. This research set out to do two things: 1) find out what kinds of online resources students often utilise to learn about a global problem in world geography, and 2) figure out how students judge the quality of such resources. It is possible that these results will help in figuring out how to use internet resources to enhance students' topic knowledge comprehension. The research included 65 students enrolled in a 2015–2016 fall global geography course. For an additional credit, the class researched 20 web resources for data on oil price fluctuations. Then, relying on their own discretion, they assessed the value of the chosen sources. This study was driven by the following research questions: 1) When studying global issues in world geography, what kinds of internet resources do students find most beneficial and how often do they utilise them? What factors do students consider when deciding if an online resource is helpful?

Background

The use of the internet to enhance student learning and provide a variety of learning possibilities dates back to the mid-1990s in higher education (Eynon, 2005; Gardner, 2003). Reed & Mitchell, 2001; Solem, 2000; Stewart, Stott, & Nuttall, 2011 are just a few of the many academics that have found the internet to be an invaluable tool for higher education instructors and students alike. Students may use the internet to obtain course materials, contact with their teacher and classmates via email, and do research.

data that could be useful for their academic projects (Eynon, 2005; Selwyn, 2008). It is hard to conceive of higher education instruction and student learning in its current form without the internet, which serves as an essential resource for both (Maloney, 2007). Undergraduates nowadays are considered "digital natives" (Prensky, 2001, p. 1) since they have grown up with computers and the internet. Computers, mobile phones, and video games have become an integral part of their daily life, and they spend most of their time communicating via these mediums (Prensky, 2005). As a result, those who were born into the digital age are more likely to rely heavily on and seek out information online (McMillan & Morrison, 2006; Weiler, 2005). Rather of relying on books and other library resources, many undergraduates nowadays do their research online (Eynon, 2005; Selwyn, 2008). Also, rather of relying on more conventional paper sources, students increasingly turn to internet resources while doing academic assignments. Evidence from many surveys (Dilevko & Gottlieb, 2002; Ebersole,

2005; Lee, Han, & Joo, 2008; Lee, Paik, & Joo, 2012; Tomaiuolo, 2005; Xie & Joo, 2009) suggests that a significant portion of students rely on internet resources for course work. Using the internet to research topics that interest them and get the most recent information is only two of the many ways in which students benefit from this tool in the classroom (Tsai, Hsu, & Tsai, 2012). Students' academic performance may be enhanced via the development of twenty-first century abilities, such as the ability to seek out and evaluate information, as well as solve problems (Raes, Schellens, De Wever, & Vanderhoven, 2012).

Despite students' comfort with and ability to access material online, little is known about how to make the most of students' time spent online when teaching (Kirkwood & Price, 2005; Taffs & Holt, 2013). According to Head and Eisenberg (2009), students faced double the challenge when it came to finding and evaluating course-related internet resources as they did when it came to resources pertaining to personal finance, politics, health, and careers. According to many studies, undergraduates do not possess the knowledge or abilities necessary to effectively use online resources for their education (McMillan & Morrison, 2006; Rowlands et al., 2008). Students do not think about the quality of online materials when they utilise them (Connaway, Dickey, & Radford, 2011). In addition, Dilevko and Gottlieb (2002) demonstrated that students still choose online sources over printed ones, despite students' perceptions of the reliability and detail of online sources being lower. Irrespective of their quality, students prefer using online information sources due to its quick accessibility (Joo & Choi, 2015). Furthermore, students often assume that the vast majority of internet sites provide accurate and trustworthy information without checking their credentials (Taylor, 2012).

So, there's been a problem with the gap between what teachers want their students to do with online resources and what they really do (Saunders, 2012). Unfortunately, not all teachers have taken their pupils' quest and use scholarly methods to assess internet resources (Saunders, 2012). Curriculum planning becomes more challenging when every student is considered at a distinct skill level (Weiler, 2005). According to Tomaiuolo (2005), teachers only find about half of the internet resources students use for research papers to be suitable; the other half are deemed untrustworthy and unsuitable. Thus, teachers would rather their pupils not access any unapproved sources of knowledge online, such as the electronic journal articles they provide (McDowell, 2002). Students may not develop the skills necessary to become "independent information users" if they are subject to too much regulation (McDowell, 2002, p. 264).

Students should be able to search for, assess, and choose suitable sources in order to make efficient use of online information resources for learning (Leeder & Shah, 2016). According to Kirkwood (2008), it is crucial for higher education to prioritise the teaching of information literacy. Some teachers of information literacy focus only on teaching their pupils how to properly cite scholarly works, such as cited journal articles (McDowell, 2002). Nonetheless, it is the responsibility of educational resources to ensure that all students acquire information literacy skills, including how to efficiently seek

for, evaluate, and use relevant data (American Library Association, 1989). Students must acquire information literacy skills such as evaluating the reliability of online sources, knowing that various goals influence the development and dissemination of online information sources, and appreciating the significance of information (American Library Association, 2016).

Study Framework

Technical Approach

Prior to the main investigation, a pilot study was carried out with fifteen undergraduates. The goal was to make the research tool and methodology better. Students enrolled in an autumn 2015 global geography course were the primary subjects of the research. There was no pressure to participate. As an additional credit activity, 65 out of 125 students in the class took part in this research. Locating and assessing internet resources on the subject of fluctuating oil prices was the job at hand. A total of 89 people were supposed to take part, however 24 replies weren't considered since they were missing some crucial piece of information. Because we were interested in discovering which online information sources students choose and find useful in the process of completing their course assignments in a real academic setting, we opted for the assignment format instead of other research methods like surveys and interviews. The majority (84.6%) of the 65 students who participated in this research were either freshmen or sophomores; the remaining students were spread out among different academic years: 36 first-years, 19 second-years, 5 third-years, 3 fourth-years, and 2 post-baccalaureate students. Among the 65 students, over half were from the fields of interdisciplinary studies (22 students, or 33.8% of the total) and international studies (13 students, or 20% of the total).

In this study, we invited participants to research 20 different internet resources about oil price fluctuations, including what factors influence these prices, the impacts and consequences of these fluctuations, and our expectations for the future of oil price trends. We decided to examine oil price fluctuations since they are a key component of the North Africa and Southwest Asia unit's content and provide insight into the world economy. In a table, students recorded the details of the sources they used, including the title, kind, and URL of each source as well as a brief synopsis of its contents. The next step was for the students to use their own discretion to rate the sources from one (the most helpful) to twenty (the least helpful). In addition, we wanted students to explain why they thought each source was reliable.

The following examples and a list of thirteen different kinds of online information sources were supplied to students based on the findings of the pilot study:

• Content on websites belonging to broadcast channels (such as CNN, ABC, and BBC)
• Pieces published in periodicals (such as Forbes, Fortune, and The Economist) For example, the New York Times, USA Today, and the Wall Street Journal all have articles available on their websites.
• News pieces published on websites including Vox.com and MarketWatch Articles featured on websites of radio stations (such as NPR and PBS) For Dummies and HowStuffWorks are only two examples of instructional websites.

• Public online chat rooms
• Websites owned by organisations
• Online diaries or personal websites
• Journal articles retrieved from academic websites, databases, or digital libraries (e.g., Google Scholar)
• Question-and-answer websites for social media—like Yahoo! Answers
• Online encyclopaedias and Wikipedia
• Other resources (such as YouTube and Google Books)

During the pilot project, students mostly consulted news items from a variety of websites due to the nature of the assignment's topic—changes in oil prices. News pieces were categorised into many sorts to analyse the specific features of the sources students consulted. These types included broadcast channels, periodicals, newspapers, online news sites, and radio station websites.

Table 1 shows the reasons why participants were asked to rate the sources according to their definitions. In order to clear up any doubt, the course teacher went over each of the reasons with the pupils. Literature reviews and the findings of the pilot project formed the basis of the list. Numerous researchers have shown that students' choices in sources (e.g., accessibility, familiarity, ease of understanding, free use, currency, comprehensiveness, credibility, and how interesting the source is to read) and their reasons for not choosing a particular source (e.g., inaccessibility, difficulty of understanding, unfamiliarity, cost of use, outdatedness, incomprehensibility, and inaccurate) are influenced by a variety of factors. In particular, a study by Lee, Paik, and Joo (2012) examined the selection diaries students kept for online sources in order to determine

Students' diaries revealed the criteria they used to accomplish the information-search activities, including accessibility, credibility, coverage, and simplicity of understanding, each of which had a definition. Our research here used the same definition as that of Lee, Paik, and Joo (2012). We included arguments for the lack of usefulness that ran counter to those reasons for the usefulness and their definitions as we were interested in students' assessments and viewpoints on which online information sources are not beneficial.

Table 1
A list of reasons for evaluating a resource to be useful or not useful. Definitions adopted from Lee, Paik, and Joo (2012)

	Reason	Definition
For useful resources	Accessible	The resource is easily and quickly found and available.
	Comprehensive	The resource provides broad and detailed information that others do not cover.
	Credible	The information from the resource is correct and reliable.
	Easy to understand	The resource is clear.
	Organized	The information from the resource is efficiently structured.
	Interesting	The resource provides an appealing point of view.
	Updated	The resource includes current information.
For not useful resources	Inaccessible	The resource is found with difficulty.
	Limited	The resource provides less detailed information.
	Unreliable	The information from the resource seems incorrect.
	Difficult to understand	The resource is confusing.
	Disorganized	The information from the resource is poorly organized.
	Boring	The information from the resource is too general and typical.
	Outdated	The resource covers past information.

Students had approximately two weeks to complete the assignment. Each of the 65 students' tables with 20 online information sources and their usefulness ranks regarding the changes in oil prices were then collected. A total of 1,300 online information sources were used in this study. First, data from the students' tables were organized using Microsoft Excel. Then the source types that students preferred for the given assignment were identified, and their rankings were examined. Next, frequently mentioned reasons that a source was considered useful or not useful were investigated. Lastly, students' perspectives about various types of online information sources were

analysed using the frequently mentioned reasons that a source was considered useful or not useful. General patterns of online information source examples determined not to beuseful as

identified by students were also examined.

Findings and Discussion

What types of online information sources do students use more frequentlyand consider more useful for understanding a global issue in world geography?

To identify the types of online information sources that students preferred to use for the assigned task, the 1,300 sources were classified according to the 13 categories described earlier. Each source was checked to ensure that students had categorized them accurately. Among the 1,300 sources compiled, 702 were unique sources, and 599 sources were duplicated at least once. The maximum number of duplications for one source was 30. That is, 30 different students selected the same source. Students might have evaluated the same source differently, and as the aim of this study was to understand individual students' online information selection behaviour and perspectives for determining the usefulness of these sources, all duplicated sources were included for analysis. The high numbers of duplicated sources suggest that most students only examine online information listed on the first few pages of search results. Bloom and Deyrup (2015) found in their research that 50% of the students selected only online information sources searched on the first page of search results; those students did not go to the second page.

As shown in Table 2, of those 1,300 online information sources, the types of sources most-frequently used were articles from online news sites (255 sources: 19.62% of the total). Students searched for news articles from various sites, including online news, newspapers, magazines, and broadcast channel sites, and these source types made up 65.24% of the total online information sources that students selected. Students also used many sources from organizational webpages (220 resources: 16.92% of the total). These sources were mainly from for-profit and non-profit organizations related to oil, the financial industry, energy, and natural resources. Comparably, the types of sources less- frequently used were online discussion forums, social question-and-answer services, and personal blogs or webpages.

Resource type	Frequency	Percentage	Usefulness ranking (1: the most useful;20: the least useful)	
			AVG	SD
Online news sites	255	19.62%	11.21	5.57
Organizational webpages	220	16.92%	10.17	5.55
Newspaper sites	216	16.62%	9.89	5.67
Magazine sites	196	15.08%	9.99	5.74
Broadcasting sites	181	13.92%	10.09	5.82
Scholarly journals	59	4.54%	10.97	5.56
Instructional sites	47	3.62%	7.94	5.73
Others	38	2.92%	10.61	5.25
Radio station sites	28	2.15%	12.07	5.84
Wikipedia/Online encyclopedia	24	1.85%	11.54	6.22
Personal blogs/websites	20	1.54%	12.35	6.17
Social Q&A	15	1.15%	14	5.37
Online discussion forums	1	0.08%	9	-
Total	1300	100.00%		

Table 2 also shows the usefulness ranking of each source type as assigned by the students. The lower number represents sources considered to be more useful, and larger numbers represent items considered less useful. Among the 13 source types, students found sources from instructional sites to be the most useful (average ranking of 7.94/20) and sources from social question-and-answer services to be the least useful (average ranking of 14/20). The results show that students identified instructional sites as useful sources mainly because of how easy they are to understand and clear organization of information. One of the main goals of instructional sites is to explain key concepts and terms about a topic in a clear and understandable way. It is likely that the text on these sites is written in layman's terms, and the information is usually presented in a way that helps the audience to understand the topic. Therefore, students might find this type of source easy to understand and highly useful.

Articles from newspapers and magazine sites were the second- and third-most frequently identified sources of useful information (average ranking of 9.89/20 and 9.99/20, respectively; see Table 2). Many students viewed these sources to be useful because they found them to be interesting. Similarly, students assessed articles on online news and radio station sites as interesting, although they reported that these articles were less useful than those from newspaper and magazine sites. In the case of articles on broadcast channel sites, students believed that these articles were credible and easy to understand. Since most of these news articles also included video clips, students seemed to trust the given information more than they did information from other sources. The most frequently identified reason that students found information from organizational websites to be useful was the comprehensiveness of the source, as some sources in this category included technical reports with very detailed information regarding oil price changes.

Some students believed that scholarly journal articles were useful because they provided comprehensive information, while others thought scholarly journal articles were not very useful because many articles were somewhat outdated. Additionally, students responded that Wikipedia and online encyclopaedias were useful because they

were easy to find, but students were aware that the information on such sources could be limited and unreliable. Meanwhile, students felt that personal blogs or websites were less useful (average ranking of 12.35/20; see Table 2) but liked their interesting point of views. Lastly, social question-and-answer services were identified as the least useful sources (average ranking of 14/20; see Table 2) mainly because students believed that the information featured in these sources is often unreliable.

Which criteria do students apply to determine the usefulness of an online information source?

Some students reported that all 20 sources they found were useful, while others found only some sources to be useful. In general, however, sources

ranked in the top five were identified as being useful, and sources ranked in the bottom five were identified as not being useful. Therefore, we analysed the frequently used reasons that the top five and the bottom five sources were identified as being useful or not being useful by each of the 65 students to examine the decisive and critical factors that students used to determine the degree to which an online information source is useful for learning.

Most students identified only one primary reason for determining whether a source was useful or not, but others provided more than one reason for some sources. Mostly, multiple reasons were given in the same category. For example, a student considered a source to be useful because it was both accessible and interesting, qualities that were both in the category of 'useful reasons'. However, some students would identify a useful source but point out its negative aspects. For example, a source was ranked highly because it provided comprehensive information despite being boring. We included and analysed all of the reasons identified by students.

As shown in Table 3, the most frequently identified reason that the top five sources were considered to be useful was comprehensiveness (27.69%), followed by how easy to understand the source is (21.54%) and students' level of interest in the source (18.15%). Credibility (16.31%), how up-to-date the source is (15.38%), and accessibility (13.54%) were not viewed as important. These results suggest that students find a source to be highly useful when it provides broad and detailed information and is written at an appropriate reading level for them or provides them with interesting content.

According to Tsai et al. (2012), when students search for course-related information, they focus on finding a good-enough answer rather than on critically evaluating information or seeking a complete understanding of the topic. They invest little time and effort in reviewing information on their own. Instead, they rely on search engine descriptions, check the search results instantaneously without thoughtful consideration, and end searches when an acceptable result is acquired (Bloom & Deyrup, 2015; Thomas, 2004). When asked to evaluate online information, students do so cursorily not reflectively and deliberately (Julien & Barker, 2009). They rely heavily on Google (Connaway, White, Lanclos, & Le Cornu, 2013; Head & Eisenberg, 2009; Kolowich, 2011) and often consider rankings in search-engine results as recommendations of quality and credibility (Asher, Duke, & Wilson, 2013; Taylor & Dalal, 2014). As indicated in prior research, students often behave as 'information consumers', preferring convenience and ease of use (Becker, 2009) over credibility (Joo & Choi, 2015).

In the case of the five bottom-ranked sources, limited details of information (20.92%) was the most frequently identified reason for the ranking a source as not useful .

boring, too. Furthermore, when a source required a substantial amount of background knowledge, they found it difficult to understand. For example, in this study, students identified online information sources requiring prior understanding of the relationships among countries or each country's position regarding oil price, production, export, and import to be difficult to understand. Reports written by organizations like the World Bank or International Energy Agency were also difficult sources for students because of their lack of prior knowledge.

Outdated and unreliable sources were found not to be useful by approximately 10 and eight percent of the students, respectively. Online information sources identified being outdated were those published more than five to six years ago and those that did not offer information about the current situation. Online information sources identified as unreliable were mostly those in Wikipedia and social question-and-answer service sites. Students took a critical stance toward these sources because they believed that Wikipedia, personal blogs/websites, Twitter, and social question-and-answer websites were for sharing personal opinions rather than factual information, which is not always the case. This suggests that students' evaluations were based primarily on surface features rather than the actual content of the information they found in these sources. These findings are consistent with the prior research that indicates that students have difficulty in evaluating online information and overall do not hold a critical attitude towards online sources (Brand-Gruwel, Wopereis, & Vermetten, 2005; Flanagin & Metzge, 2010).

Disorganization (7.69%) and inaccessibility (6.77%) were also factors that reduced students' usefulness rankings for online information sources, although these were not as significant as the factors discussed above. There were several cases in which students considered online information sources to be inaccessible, including (1) when students had to sign up to read an entire article; (2) when students needed to scroll down to the bottom of a page or click several times to complete a search in order to, for instance, read an article they found on Twitter; and (3) when the sources were only accessible through a library network.

Improving Students' Information-Literacy Skills in Geography

Training for finding and using reliable online information sources is important for helping students become critical users of online sources. The results of this study indicate that students care more about the amount and the coverage of information featured in the sources rather than their quality, accuracy, and reliability. It might be intuitive to think that personal blogs or websites and social question and answer services contain information that is subjective. However, it is also true that information provided by other media such as magazines and broadcast channel sites could be inaccurate. Scholars have emphasized the necessity and significance of information-literacy skills.

Many scholars have recommended the integration of information-literacy training into course curriculum as an effective and efficient way to improve students' information-literacy skills (Bruce, 2004; Bruce & Chesterton, 2002; Currie et al., 2010).Based on the results of this study, we propose several ways of improving students' information-literacy skills in geography courses. First, students need training to understand characteristics of each online information source types and their different angles of assembling and disassembling information. The students who participated in this study evaluated information from news media positively. Particularly, students tended to trust information from those sites more than they did information from other types of sources. However, news media often frame and deliver information based on their own perspectives and viewpoints, so some of their information may be biased (Entman, 2007). Additionally, online information provided by organizations may have different opinions and attitudes regarding an issue, depending on their positions or organization types (i.e., governmental, for-profit, or non-profit organizations). Therefore, students should accept information critically and use it selectively. It would be helpful for students if instructors explain the relevant background information and the circumstances of information construction and communication before assigning any assignments or tests involving online information.

As expected, the percentages of scholarly journal articles students used were relatively low in this study, whereas previous research indicates that most instructors wish that students would use them as resources for course assignments (Tomaiuolo, 2005). Often, university libraries offer sessions for students about how to access online article databases and search for journal articles, but not many students actually use these sessions; students prefer search engines to online article databases (Lee, Paik, & Joo, 2012; Tomaiuolo, 2005). The scholarly journal articles selected in this study were mostly uploaded articles on certain webpages, and it seems that those articles were found using search engines like Google rather than a library website. To encourage students to use journal articles for their coursework, it is important to show students how to search for them frequently in class. Since some of the journal articles are difficult to understand for undergraduate students, suggesting a list of journals that is appropriate for them may be helpful.

Furthermore, we found that students considered lengthy sources or those requiring background knowledge not to be useful because they were boring or difficult to understand. Consequently, students seemed to avoid reading such sources and preferred reading simple, easy-to-understand, short, online information sources. However, students often need to search for new information and acquire knowledge from detailed and professionally written online sources. Therefore, reading such sources as homework assignments or in-class activities would be helpful. After reading, understanding, and analysing content together in class would be a useful practice for students. For sources that

require prior knowledge, we recommend providing additional materials for students.

Finally, for the successful integration of information-literacy training and course curriculum, a strong partnership between instructors and librarians is desirable (Bruce,

004; Currie et al., 2010; McDowell, 2002; Weiler, 2005). Instructors are subject-matter experts, not necessarily experts about information literacy, but university librarians are trained in information literacy and can provide useful resources for students. Since both groups have different perspectives, experiences, and knowledge, a complementary collaboration could improve curriculum design and development to enhance students' understanding of content knowledge to become autonomous information consumers andself-motivated learners.

Conclusions and Recommendations

Higher education has seen a shift in pedagogy due to the proliferation of online information resources and the ease with which students may access them. Online information sources are preferred by undergraduates and are used for academic purposes either often or entirely, according to previous research. Examining the types of online information sources commonly chosen, those deemed useful or not, and the characteristics students use to determine if a source is useful for their learning, this study sought to identify students' online information source selection behaviour in a real-world course setting.

Results from an analysis of 65 students' answers to a search assignment concerning oil price fluctuations reveal that students relied on items published on internet news sites the most. The majority of students found instructional website sources to be the most helpful, while social question-and-answer services were ranked as the least helpful of the many online knowledge sources. Students in this research met some of the requirements for validating the credibility of internet resources as pedagogical tools. In particular, students anticipated that individual views would not be reliable sources of information since they ranked social question-and-answer services and individual blogs/websites lower than other forms of internet information. When deciding which online resources are most helpful, students consider a variety of factors. Comprehensiveness was the most important criteria when evaluating sources for their usefulness. When a source provided only a small amount of information, students saw it as useless. In other words, students place a premium on sources that provide them with enough and thorough knowledge on acertainsubject.

While the research was successful in its aims, it may be even better. This study's results should not be taken too seriously due to its small sample size and the specific nature of the subject that participants were asked to research using internet resources. We did not go into the reasoning behind students' decision-making processes as we just asked them to choose the criteria that affected their opinion of a source's usefulness or lack thereof. Consider the case of students who selected "credibility" as their primary reason; it is unclear if this was due to the presence of supplementary information like images, charts, and statistics or whether they simply checked the source's

references. Future research on this topic could benefit from having students explain their reasoning in a focus group setting or in one-on-one interviews. Furthermore, changes in how and what students seek for online after the

It is important to investigate how international geography courses can put the suggested training and activities into practice to enhance students' information literacy.

List of Sources

Institute of American Librarians. In 1989. (Chicago: American Library Association): Final report of the presidential committee on information literacy. Referenced on July 3, 2016, the document may be found at http://www.ala.org/acrl/publications/whitepapers/presidential.

Institute of American Librarians. 2016 was the year. (Chicago: American Library Association), Framework for Information Literacy for Higher Education. The information may be found at http://www.ala.org/acrl/standards/ilframework, which was searched on November 26, 2016.

Authors: Asher, A. D., Duke, L. M., and Wilson, S. 2013 was the year. Discovery Routes: Evaluating the efficacy of search engines like Google Scholar, EBSCO Discovery Service, Summon, and traditional library resources. Public and Academic Libraries, 74(5), 464-488.

In 2009, Becker published a work. Research and student values: Will millennials really shape the field's future? Volume 49, Issue 4, Pages 341-364, Journal of Library Administration.

Bloom and Deyrup (1999). in the year 2015. Documentation of student actions at SHU: trans-scripted. "The Journal of Academic Librarianship," volume 41, issue 5, pages 596–600.

Vermetten, Y., Brand-Gruwel, S., & Wopereis, I. in the year 2005. An examination of a difficult cognitive ability: information problem solving. "Computers in Human Behaviour," volume 21, pages 487-508.

The author is Bruce. the year 2004. This background paper explores the role of information literacy as a force that may transform education. In the proceedings of lifelong learning, edited by P. A. Danaher, who asked, "Who is responsible for it, and how can you help?"(pp. 8-19) in Proceedings of the Third International Conference on Lifelong Learning. Press of Central Queensland University, Queensland, Australia. On July 3, 2016, it was accessible at http://eprints.qut.edu.au/4977/1/4977_1.pdf.

Publication: 2002 by Bruce and Chesterton. Creating a shared identity: The role of information literacy in college course work. Volume 7, Issue 1, pages 31–40, International Journal for Academic Development.

The author of the quote is J. E. Bullard. in the year 1998. Getting the word out about local agenda 21: Making advantage of online tools.

Two thousand two, pages 201–210, published in the Journal of Geographical Education in Higher Training.

The authors are Burton and Chadwick. year (2000). Researching student research habits: habits of usage and standards for using library and online resources. "Computers and Composition" (17(3), 309-328).

Written by Castleford and Robinson. in the year 1998. Some case studies on the evaluation of IT-based tools to help geography learning and teaching. Volume 22, Issue 3, Pages 375–381, Journal of

Geography in Higher Education.
Christopherson, N. R., and Harvey, F. J. in the year 1998. Expanding the scope of education: Learning with the help of hypermedia. Volume 22, Issue 1, pages 11–18, Journal of Geography in Higher Education.
Dickey, T. J., Connaway, L. S., and Radford, M. L. 2011 was the year. One of the most important factors in people's decisions to seek out information is how easy it is for them to do so. Journal of Library and Information Science, 33(3), 179–190.
S. Connaway, D. White, D. Lanclos, and A. Le Cornu. 2013 was the year. What drives people to interact with the digital information environment, both inhabitants and visitors? Data Analysis, eighteen points one. You may find it at this URL: http://www.informationr.net/ir/18-1/paper556.html#.WJIq8PkrLIU. I read it on February 1, 2017.
Graves, K., Emde, J., Devlin, F., and Currie, L. in the year 2010. Finding reliable sources: search tactics and rating criteria for undergraduates. The article is published in New Library World, volume 111, issue 3, pages 113–124.
Dilevko and Gottlieb (named). two years ago. Undergraduate study relies heavily on print materials even in this digital day. Pages 381–392 of the Journal of Academic Librarianship, volume 28, issue 6.
The author of the article is Silbergott. in the year 2005. Individually: the academic use of the commercialised web by students.
Paper published in Library Trends, volume 53, issue 4, pages 530-538.
According to Entman, R. M. in the year 2007. The role of the media in the allocation of power: framing bias 1. Published in volume 57, issue 1, pages 163–173.
Ryan, R. in the year 2005. Internet usage in higher education: instructors' perspectives on the efficacy of various forms of information and communication technology in the classroom. The article is published in the Aslib proceedings journal and can be found on page 168–180.
"Flanagan" and "Metzge" are authors. in the year 2010. An empirical investigation of youth, digital media use, and information credibility (kids and credibility). Edited by MIT Press, Cambridge, Mass.
A. Gardner. year 2003. Learn about the environment and geography with the help of the JISC resource guide: Uncovering linked data in the digital era. 103–107– The Journal of Geography in Higher Education, volume 27, issue 1, pp.
This work is by Goett and Foote. year (2000). Facilitating the development of students' capacity to research and study in online classrooms. Vol. 24, No. 1, pp. 92–99, Journal of Geography in Higher Education.
Both Head and Eisenberg are authors. the year (2009). The opinions of today's college students on the topic of online research. The Information Literacy Project Evaluation Report. The Information School at the University of Washington is located in Seattle. This report was obtained on January 29, 2017, from the following URL: http://www.projectinfolit.org/uploads/2/7/5/4/27541717/2009_final_report.pdf.
Authors: Hsu, C.-Y., Tsai, M.-J., Hou, H.-T., and Tsai, C.-C.A. 2014 was the year. Behavioural patterns, internet search tactics, and epistemic views are all examined in the context of socioscientific concerns. Press, 23(3), 471-480. Journal of Science Education and Technology.
Verma, K., Hong, J. E., and Jo, I. 2016

was the year. The use of web-based geographic information systems to support spatial thinking in global geography courses. Journal of Geography in Higher Education, 40 (3), 442-459.
Webber, S., and Johnston, B. year 2003. A review and case study on information literacy in higher education. Journal of Research on Higher Education, volume 28, issue 3, pages 335–352.
Joo and Choi (2019). in the year 2015. Usefulness, usability, resource quality, and individual variation are factors that influence which online library resources students choose to utilise for academic assignments. Library Hi-Tech, 33(2), 272-291.
Written by Julien and Barker. the year (2009). Criticisms made by high school pupils of scientific claims: a foundation for the improvement of information literacy abilities. Journal of Library and Information Science, Volume 31, Issue 1, Pages 12–17.
By Kim, K.-S., and S.-C. A judge. in the year 2007. The impact of avoidant style, self-confidence, and individual agency on undergraduates' information perception and source selection skills in solving problems. Volume 33, Issue 6, Pages 655-665, Journal of Academic Librarianship.
This is Kirkwood, A. in the year 2008. Finding it online: The rationale and practice of using the internet as a resource for self-directed undergraduates. The article is published in the Journal of Computer Assisted Learning, volume 24, issue 5, and pages 276-382.
By Kirkwood and Price (2013). in the year 2005. How might our understanding of students' perspectives on and use of ICT impact our course design in the twenty-first century? Volume 30, Issue 3, pages 257–274, Journal of Studies in Higher Education.
As stated by Klein (2003). Assessing student progress and fostering active learning in global geography courses. Pages 146–157 of the Journal of Geography, volume 102, issue 4.
Dear Kolowich, S. 2011 was the year. Things that pupils are unaware of. Inside Higher Ed. See https://www.insidehighered.com/news/2011/08/22/erial_study_of_student_research_habits_at_illinois_university_libraries_reveals_alarmingly_poor_information_literacy_and_skills for more information (accessed 1 February 2017).
Joo, S., Han, S., and Lee, J. Y. in the year 2008. Investigation of the scientific and technology community's information-seeking habits and requirements. Korean Society for Information Management Journal, Volume 25, Issue 2, Pages 127–141.
Joo, S., Lee, J. Y., and Paik, W. in the year (2012). Selection of information resources by undergraduates for academic search assignments. Research in Information Systems, 17(1), paper511. This material was acquired on July 3, 2016, from the following URL: http://www.informationr.net/ir/17-1/paper511.html.
Leeder and Shah (1999). 2016 was the year. Student search behaviour is enhanced by the practice of critically evaluating internet sources. Full text of article: The Journal of Academic Librarianship, 42(4), 459-468.
Maloney, Elizabeth F. in the year 2007. The lessons about education that web 2.0 can provide. Published in the Chronicle of Higher Education, volume 53, issue 18, page B26.
L. McDowell. two years ago. An exploratory investigation of the prospects for student learning and freedom in

undergraduate education: electronic information resources. Volume 33, Issue 3, pages 255-266, British Journal of Educational Technology.
Morrison, M., and McMillan, S. J. In 2006. The qualitative study of young people's experiences growing up with the internet: its pervasiveness and its impact on their daily lives. Society for New Media, 8(1), 73–95.
In the case of McMorrow, J. in the year 2005. Taking a virtual tour of Dark Peak as a tool to get students ready for fieldwork. Published in the Journal of Geography in Higher Education, volume 29, issue 2, pages 223-240.
A. Mather, J. Grattan, A. Holmes, and R. Newnham are the authors of this work. in the year 1998. Assessing the efficacy of using online resources as a foundation for geographical education. Volume 22, Issue 1, pages 19–34, Journal of Geography in Higher Education.
Author: Prensky, M. the year 2001. Part one: digital natives and immigrants. From here to there, in issues 9–5, parts 1–6.
Author: Prensky, M. in the year 2005. Pay attention to the locals. Journal of Educational Leadership, 63(4), 8–13.
Vanderhoven, E., De Wever, B., Schellens, T., and Raes, A. in the year (2012). Assisting in the resolution of informational issues via collaborative web-based research. Paper published in the journal Computers & Education, volume 59, issue 1, pages 82–94.
Mitchell, B., and Reed, M. the year 2001. A case study in Canadian geography that uses information technology for collaborative learning. The citation is from the Journal of Geography in Higher Education, volume 25, issue 3, pages 321-339.
This is a work by Rees and Legates. 2013 was the year. Bringing "region" back into globally focused regional geography. Section 37, Issue 3, of the Journal of Geography in Higher Education, contains the following texts: 327-349. Published by Ritter and Lemke in 2017.
year (2000). Making use of online resources to address the "seven principles for good practice in undergraduate education". The citation is from the Journal of Geographical Research in Higher Education, volume 24, issue 1, pages 100%-108.
Withey, I., Fieldhouse, M., Nicholas, D., Williams, P., Huntington, P., Gunter, B., and Rowlands, I.
R. in the year 2008. The Google generation: How future researchers will use information. 290–310, ASLIB Proceedings, 60(4).
Saunders, Laura. in the year (2012). Views held by educators about information literacy as a potential result for student learning. Academic Librarianship: A Journal of Research and Practice, 38(4), 226-236.
Selwyn, the author. in the year 2008. An analysis of how various students using the internet for their academic work. Publication: Active Learning in Higher Education, Volume 9, Issue 1, Pages 11–22.
Tolem, M. N. year (2000). The online geography programme: evaluating a game-changer in the field of geography education. The citation is from the Journal of Geography in Higher Education, volume 24, issue 3, pages 353-564.
This work is by Steinberg, Walter, and Sherman-Morris. two years ago. Making use of online resources to combine geographical teaching with regional and theme-based methods. Volume 54, Issue 3, pages 332–348 of The Professional Geographer.
Stott, M., Nuttall, A. M., and Stewart, M.

2011 was the year. How students actively participate in the geography courses at levels 1 and 3: factors affecting students' presence in class, grades, and making use of course materials online. Paper published in the Journal of Geography in Higher Education, volume 35, issue 1, pages 47–65.
K. H. Taffs and J. I. Holt. 2013 was the year. A study on the efficacy of online learning tools for environmental science students' academic writing development. Volume 37, Issue 4, pages 500-514, Journal of Geography in Higher Education.
The author is Taylor. in the year (2012). Examining how members of the millennial age seek for information. Paper 508 in the journal Information Research, volume 17, issue 1. Can be accessed at: http://www.informationr.net/ir/17-
The information was retrieved on November 22, 2016.
This work is by Taylor and Dalal. 2014 was the year. Information literacy standards and the world wide web: Results from a student poll on appraisal of online information sources. Studies in Information and Knowledge Management, 19(4). Check it out at https://eric.ed.gov/?[1 February 2017] (id=EJ1050475).
N. P. Thomas (2004) says... Using research to practise in the School Library Media Centre: Instruction in information literacy and information skills (2nd ed.). Libraries Unlimited, Westport, Connecticut.
The author is Tomaiuolo. in the year 2005. The perspectives of college faculty on the use of free online resources by their pupils. Academic librarianship: a journal published six times a year, volume 31, issue 6, pages 559-566.
M.-J. Tsai, C.-Y. Hsu, and C.-C. Tsai. in the year (2012). Examining the function of both explicit and implicit techniques in the online scientific information seeking performance of high school students. Press, 21(2), 246-254. Journal of Science Education and Technology.
Author: Weiler, A. in the year 2005. Generation Y students' information-seeking behaviour: The role of intrinsic motivation, evaluation, and theory of learning. Journal of Academic Librarianship, volume 31, issue 1, pages 46–53.
D. Wong (1978). in the year 1998. Making a digital library available online to educate global regional geography. Chapters 257–262 of the Journal of Geographical Education in Higher Learning. Published by Xie and Joo. the year (2009). Task kind, source familiarity, and ease of access are factors to consider while choosing an information source. The article is published in the AIMS Proceedings, volume 46, issue 1, and spans pages 1–18.
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