Geographic media literacy for indonesian geography education

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Abstract. In this information-saturated world, people are thriving to cope with seemingly overload streams of information and images. The digital advancements alter and extend our means of communication abilities, information access, and spatial formations. Hence, a new literacy is needed to wield this new digital world. In this regard, the current conceptual paper attempts to explore the nexus of media literacy and geography education in coping with the digital era. The paper reviews the literature on geographic media literacy by describing the essential elements of the relevant literacy coined by Lukinbeal (2008). The paper goes on to discuss the three factors that play a prominent role in geographic media literacy. Finally, this paper recalls the importance of geographic media literacy and how it can contribute to the development of geography education in the Indonesian Setting.

1. Introduction
In the past decade, the level of exposure of the internet and digital media to their end-users has been considered as very high. Both of the convergence media and the internet have been regarded as more than just a temporary trend, but a vital social need. Internet connection has been serving more than 58% of the world population, and there has been a massive increase in Internet users by 364% since 2009 [1]. The digital and information era has changed the means for communications and knowledge by providing broader access to information and interactions [2], [3]. Even in the context of geography, rapid media technological development has also change spatial formations of daily human life [4].

The current conceptual paper attempts to address the nexus within the development of technology, media, and geographical literacy. Lukinbeal [5] then redefined those relations into a concept known as geographical media literacy. He believed that the concept could be beneficial for geography education by fostering students’ critical thinking, media awareness, and geographical literacy.

In an era of digitalization media, technology-based economies, and extensive flow of information, a stimulating paradox emerges. Geographic information is on the rise, but geographic literacy seems to be on the decline [5]. A survey by The National Geographic Society and the Council on Foreign Relations (CFR) indicated that there were essential gaps between the understandings of young adults in the U.S regarding the world geographically and what they require to know in order to cope with a more interrelated and integrated new world [6]. Another study showed a lack of geographic knowledge within the U.S university students. The result of the survey showed that only half of the respondents appropriately recognizing Mandarin Chinese as the most spoken language in the world,
and only 57 percent of the students able to identify Sudan as a country in the continent of Africa [7]. The case also happened in the domestic context of Indonesia. Approximately 73% of Indonesian learners did not have proper knowledge of geography, environment, and demographics related issues [8]. This condition is alarming, considering that Indonesia is considered as the highest growth of internet user in the world for the past ten years [9].

While locating places and demographic knowledge are only a few of many geographic literacy skills, the facts above present some alarming statistics that needed to be responded to. Instead of using a typical response to use the alarming reports as a boost for the need for more geography education at all levels, Lukinbeal [5] added that geographic literacy is also related intimately to media literacy and this literacy needs to be embedded within the geography discipline. It is in the specific construction of geographic media literacy that this paper wishes to review and extend.

2. Methods
The authors employed the secondary research method in reviewing the literature. Secondary research can provide a firm context for the study area within its broader discipline or issue. This is in line with the objectives of this paper that aimed at providing a conceptual framework of how media literacy and geography education can be integrated and implemented in educational settings. In conducting the review, the authors used existing scholarly sources, both online and printed sources, as the data. Afterward, the data was reviewed, collated, and summarized to expand the overall understanding of geographic media literacy as a concept.

3. Results and Discussion

3.1 Geography Literacy and Geographic Media Literacy
Before discussing the core elements of geographic media literacy, the paper would like to address the relations between geography literacy and geographic media literacy so we could get a clear description of each concept. Geography literacy or geo-literacy as a whole can be defined as the understanding of Earth systems and interconnections that we all need to live our daily life [10]. More technically, geo-literacy can be described as an ability to read maps, having spatial knowledge, and appreciating interactions between people and cultures in various areas. Geo literacy is not limited only to understand maps and spatial observations but also requires having a critical geographical perspective [8], [11], [12]. Based on the definitions, it can be said that geographic literacy is one of the components of scientific literacy that a person should have since geography analyses and illuminates linkages between places, environments, and people.

Apart from the definitions above, Lukinbeal [5] came up with an argument that geographical literacy appears to highlight more on recalling information rather than knowledge. In the same vein, the argument supports the earlier hypothesis by Baudrillard [13]; “rather than producing meaning, information functions purely in the operational realm and not in the realm of signification.” In that case, Lukinbeal highlighted that the knowledge could be achieved if a geographer could link the geographic information with media literacy. Lukinbeal [14] added that geographic information is not yet included in the realm of signification (the construction realm of meaning and semiotics), but still, mainly focused on the operational realm (daily life realm). Furthermore, media literacy is a skill that looks through the information within the realm of signification, and visual media plays a crucial role in constructing meanings even in the geographic world [15]. On that account, the understanding of the media as the bearer of meanings should also support the understanding of geographic information. Therefore, geographic media literacy can be described as the ability to combine critical thinking and practical geographic skills so a person could identify, evaluate, use, and produce geographic information appropriately [14].

Geographers can utilize media to allow the knowledge of technologies and the critical geographies to blend in a meaningful discourse so that both geography students and instructors could understand more in-depth about the spatial information, identities of the information, and power contained within
an operation of a particular media representation. By employing the media to think geographically, a
person can explain issues far beyond the narrative messages within the media. Thus, this individual
will be able to use the media to create relevant content for educational purposes [5]. In other words, it
is expected that geography learners or practitioners could get information not only by accessing it, but
also able to analyze, evaluate the geographic information and then reproduce a more meaningful
geographic content.

3.2 Core Elements of Geographic Media Literacy
The term literacy introduced in this concept paper is more than just the ability to read and to access
information. As introduced by Lukinbeal [5], [14], geographic media literacy is shaped based on three
integrated skills, namely media literacy, visual literacy, and information literacy. Firstly, Potter
[16]defined media literacy as a skill set to rationally judge the meanings in each type of the new media
message, organize the meaning to be useful, and then generate a message to be conveyed to others. In
line with the definition, Wan [17] and Hobbs [18] defined media literacy as the skill to understand
media and how to utilize it as a source of communication, information, and empowerment.

The National Association of Media Literacy Education’s (NAMLE) stated the importance of media
literacy in their core principle, which is “to help individuals of all ages develop the habits of inquiry
and skills of expression that they need to be critical thinkers, effective communicators and active
citizens in today’s world” [19]. The core principle of NAMLE alters the attention of media literacy
skills to empower more people through media literacy education. The shift was conducted by changing
the focus of the discussion from “what we believe to be right about media to what we believe to be
true about how people learn to think critically” [19]. The subtle shift allows educators to rethink the
way they educate by focusing on not only what a teacher teaches but also how a teacher teaches.

The second element is the virtual literacy. It is defined as the aptness to interpret, evaluate, and give
meaning to visual information or images. Visual literacy comes from the idea that a reading process
can help us understand images and communicate the meaning, which involves an analysis of images’
creator, the images themselves, and the audience. [20]. In 1969, John Debes, the co-founder of the
International Visual Literacy Association, introduced the term of visual literacy. In general, visual
literacy attempts to explain how humans see objects or objects and then interpret and learn what they
read [21].

In relation to the geographic media literacy, Lukinbeal [14] argued that Images create something
that may lie entirely outside of our texts models and modalities. He supported the notion by Rose [22]
and Hunter [23], who stated that It is critical to address not only how images look, but also how the
readers look at them. The readers need to try various techniques of seeing images as text, including
evaluating how social identities and distinctions are spatially and socially constructed.

Additionally, visual images are constructed within the surrounding culture and its period. Since
images are a result of a construction and reconstruction of culture, not all audiences will be ready or
able to look deeper beyond what has been subtlety guided by the producer of the particular images and
their display’s distinct practices [24]. In the area of geography, visual literacy can be described as a set
of skills that allows the audience to critically evaluate social, historical, identical, and other essential
elements of spatial-visual culture. Therefore, by having a proper visual literacy, a geographer can both
receive and create appropriate visual messages. Being a visually literate person means that he or she
does have not only a decent skill of decoding symbols, images, or well-known portraits but also has
the ability to perform at a higher degree of visual competencies to make sense of what is seen and the
pragmatics surrounding it [25].

The final element of geographic media literacy is information literacy. The technological and
information advances make no geographical and time barriers. Various facilities offered will be very
beneficial if the correctness of the information can be accounted for. However, information and
technology literacy has not been well introduced in geography education [26], [27]. For this reason,
another skill needs to be embedded, and it should cover the ability to access, assess, and use
information from a vast number of available sources.
Information literacy cannot be neglected in geography education because students must learn how to locate, evaluate, and create information in various contexts. Being information literate means one’s can use the conceptual and practical medium of current information technology, understand the type, format, location, and methods of accessing information resources, understand how information is socially situated, and able to formulate and publish ideas digitally. Furthermore, it is hoped that a person could adapt to and take advantage of the continually emerging innovations in information technology, and finally able to critically evaluate the limitation and potential of communication and information technologies [28], [29]. For the teaching and learning process, those skills are needed for developing research skills and can serve as a strong foundation should in preparing students for lifelong learning. All in all, to reduce geographic illiteracy, to conceptualize, and to position geographic information within the general and the broader context of geographic media literacy is vital [14].

The three core elements are intertwined as a skill set to have the literacy of both media and geography. Spatial information in conjunction with media does not only serve as the spatial location of the communication process, or a particular space that affects communication but also the concept of space is constructed by the communication process [4]. The media or communication process can shape spatial information. For example, news in a local radio broadcast will create local listener boundaries, while news on the internet (social media) will create a more significant spatial scope of information. Thus the geographic media literacy skill can help us to access, critically evaluate, make use of, and clearly communicate geographic information in their diverse formats.

### 3.3. Geographic Media Literacy for Geography Education

The three core elements then were formulated and redefined by Lukinbeal [14] as a set of critical skills that concentrate on understanding the role that media have in our lives and teaching analytical techniques to investigate meaning creation. Moreover, to become information technology literate so that a person can communicate and express his or her understandings and analysis of geographic information through the media.

Concerning education, it is undeniable that one of the 21st-century education prominent skills are literacy, and in this sense, it means media literacy [16], [30]. Media literacy can be embedded in geographic literacy. Both of the skills will expand the concept of literacy, as today’s information penetrate in multiple forms; the definition of literacy should be associated beyond the ability to read and write.

As mentioned previously, the literacy condition in Indonesian education is at a deficient level, even the highly schooled in Indonesia are far behind global standards [31], [32]. The Indonesian press was virally reported and regretted the outcome of the survey of the world's most literate countries, which ranked Indonesia 60th out of 61 countries based on a mixed measurement of literate behavior and literacy [33]. This situation even gets worse because media literacy and geographic literacy have not been taught widely in the Indonesian education system [12], [32], [34]. As a response to the issue, the education sector should not become an anachronism in this media-saturated era. The education sector must evolve as a counterbalance for the 21st century, progressively digital and global society. A 21st-century education is about giving students the abilities they need to thrive in this new world and assist them in nurturing the confidence and wisdom to practice those skills [35], [36]. With so much information and network access that our younger generations have to retrieve, 21st-century education skills emphasize more on making sense of that load of information, sharing, and apply it in creative and more socially responsible ways.

Geographic information is culturally coded and contains signs of the social, political, and economic circumstances of the society where the information is produced [5]. For this reason, geographic media literacy should not be separated as one particular course but should be integrated into the way geography is taught. Some studies have indicated that when an instructor introduces certain geographic information, it was helpful to collaborate with library liaisons, relevant experts, or
consulting to the reliable online source to develop student geographic media literacies to get more understanding of the information given [26], [37]. This type of collaborations will give the opportunity for librarians, historians, relevant experts to share the values and concepts formulated in the information with both of the geography students and their instructors.

Besides, Lukinbeal [5] also illuminated how geographic media literacy can be utilized to understand what lies within geographic information. He took the global warming issue in the form of the motion picture as an example. The release of box office movie The Day After Tomorrow and later Al Gore’s An Inconvenient Truth, debates relating to the relationship between science, politics, and media come to the forefront While The Day After Tomorrow was a fictional film and An Inconvenient Truth a documentary, they both are mediated information that addresses issues of science and politics. Lukinbeal[14] argued that whereas scientific information works towards absolute artificial, the use of scientific information for political ends operationalizes information to meet specific practical ends. In this case, the truth of the information should be critically analyzed by using media literacy concepts that focus on how the messages are constructed through media and how it can affecting mass mediated consensus of truth. Geographic media literacy can also be used in explaining on how Thomas Raffles categorised Java into Sunda and Java based on cultural and political values that were recorded in the past by Portuguese explorer Joao de Barros [4].

Moreover, as we might already know, a YouTube channel such as “Geography Now” could attract many subscribers to follow it. Geographic media literacy could also support students’ creativity by encouraging them to create geographic-based content via digital media platforms such as YouTube, web cartoons, or info-graphic displays of data. Geographers who can relate to the media will believe that it is the combination of spatial elements and media that shape and add meaning to the audience's experience. Thus, as illustrated by the rationale above, geographical media literacy can be promoted by a high intensity of productive engagement with media, thereby adding to the current available pedagogic instruments.

4. Conclusion
The term geographic media literacy attempts to progress beyond a contemporary pedagogic platform that postulates with more geographic information and accumulated meanings. Accordingly, the literacy serves to encourage geography scholars to see the “context” within a geographic information "text.” One’s cultural context in producing messages and framing the hegemony of knowledge is seen as the critical factor in shaping meanings of the information.

Therefore, through encouraging learner-centered education practices, imposing critical understanding and analysis as well as engaging critical pedagogy, it will assist the learning and teaching process. Geographic media literacy can contribute to more advanced levels of education as we move our model of education away from pre-given texts audience and interpreters to be managers of information and responsible producers of ideas within a global and digital media culture for a better society.

For further studies, both quantitative and qualitative studies need to be conducted for a deeper understanding of the impact and experience of integrating geographic media literacy as a pedagogical tool. It is expected that further studies can capture a more detailed view of the approach.

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