



Digital History Resources: Optimization for a Meaningful Learning

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Abstract: Technological developments and globalization have contributed to the production and use of digital historical sources. Although its availability is still limited, during online learning, the existence of this resource provides a broader space to optimize the educational process in the form of enrichment of learning media. On the other hand, students who have access to various sources of information are also a challenge for teachers. Facilitators need to have the ability to package and present meaningful learning as promoted by Ausubel. Most researchers talk about digital historical sources, but there are still few who study it in the context of history learning. The literature study used in this study aims to explore things that need to be prepared by teachers in optimizing the use of digital historical sources that are oriented towards meaningful learning.

Keywords: Digital history resources, world history, globalization, meaningful learning



Introduction

The end of the 20th century marked the beginning of the development and massive adaptation of technology in daily life. This adaptation is marked by the emergence of the World Wide Web as the central pillar towards a big data or Information of Things (IoT) system. The utilization of this technology is carried out in various fields of science, including history. History cannot be separated from computing systems and network information in historical documentation on the web. Various technologies that can be used for this purpose include flash animation, XML coding, digital video, blogs, and wikis (Seefeldt & Thomas, 2009).

Based on its form, there are two types of digital history sources, namely source digitization, and digital publications. The first form is indicated by a change in form from a physical form to a non-physical form through technology. An example of digitization is an artifact that is photographed and then uploaded to the internet, stored in a storage system, to be accessed online. The second form is the historian's thoughts poured through writings on websites, blogs, and video vlogs as examples (Van Ruyskensvelde, 2014). If the first form transfers primary historical sources, the second is the production of historical works or historiography as secondary sources.

The penetration of information technology into all areas of life forces historical researchers to use it to help answer existing problems. Some of the options are simple activities carried out by historians: creating blogs containing their history, writing history with their favorite studies and then publishing it openly. However, increased accessibility means placing the need for digital historical sources to increase interdisciplinary studies (Van Ruyskensvelde, 2014).

Searching for the works of historians is currently very easy with the existence of search engines, for example, Google. Choosing the right keywords will lead us to the source of the information we need. Big data helps understand other people's thoughts (their works) by searching for phrases used, one of which is through Google data (Davidowitz, 2018). This condition shows that nowadays, it is effortless to find information in cyberspace, including digital historical sources. Technology that is developing rapidly along with the flow of globalization makes information from various parts of the world accessible easily and quickly via the internet.



The right and careful keywords are the initial challenges in finding information online. Choosing the wrong keywords will cause someone to get stuck in a maze of irrelevant and even misleading information. Moreover, in the heuristic method, historians select material, sort out relevance, and develop arguments on sources considered essential or useful (Robertson & Mullen, 2017). This ability is a challenge for historians and readers or history enthusiasts who often use inaccurate phraseology in digital repositories (Huistra & Mellink, 2016).

The development of technology and globalization also requires the world of education to adapt quickly. The works of historians in digital and physical form should be used in history learning. This approach is very relevant to the pandemic situation, which makes the position of digital historical sources quite ideal for use in online learning. Learning during the pandemic inevitably positions conventional history learning as impossible. Meanwhile, teachers are also not prepared to use new materials from the government to organize online learning. Digital sources are an alternative solution for understanding local history in this situation (Utami, 2020). It should also be realized that globalization will continue in any situation, whether during a pandemic or post-pandemic, or new normal, which means that digital-based learning is necessary.

Although the current online learning trend is less than optimal, the learning process should still be oriented towards meaningful learning. Learning is meaningful if students can relate new Information to the cognitive structure they already have (Ausubel, 1963). The importance of meaningful learning in history learning is that students understand and feel the benefits of the knowledge gained in the long term. Although the 2013 curriculum contains a relatively large material load, teachers can prioritize certain materials optimized in lesson planning. Thus certain aspects are sorted out and raised while other themes are made in structured independent learning. The suitable combination with a consideration of student's initial cognitive capacity will make it meaningful learning.

According to Ausubel (1963), the meaningful learning could be achieved if it meets three parameters. First, a relevant prior knowledge, students must have some idea at least in general to know a topic that teacher will teach. Second, the meaningful material, student perception on the material to be taught is relevant or contextual for their needs. So, they have a reason to accept the new information or connect their initial knowledge with the existing or a new one. Third, the learner must choose to learn meaningfully, it means student is



actively and voluntarily interested to acquire the knowledge instead of being forced by the system or person (teacher).

Research conducted by Lee & Molebash (2014) on a digital history investigation project by training teachers to learn the methods and application of digital history research shows the significant influence of technology in improving the quality of social studies learning. Ideally, digital historical sources have a positive impact on learning. Therefore, this paper aims to identify historical materials to utilize digital resources to achieve meaningful learning, especially for teacher use. The main question in this research is, "What needs to be prepared in utilizing digital historical sources that are oriented towards meaningful learning?". The meaningful learning parameter used is the construction of prior knowledge through digital historical sources.

Method and Research Design

This study uses a literature study. A search of journals and books was conducted to find the link between digital historical sources and meaningful learning in history learning (Creswell, 2012). Source searches were conducted online for several weeks, finding four books and nine journals used by researchers to answer the problem formulation. Data analysis used a qualitative descriptive technique from Miles & Huberman (1994): data findings, sorting and interpreting data, and data presentation.

Findings

Technology that continues to develop makes various disciplines of science need to adapt. History, known sources such as documents, artifacts, and manuscripts, are now recognized and available digitally. In general, digital history is a digital media used as a tool for presentation, analysis, and historical research (Weller, 2012). A similar opinion was conveyed by Lee (2002) that "Digital history is the study of the past using a variety of electronically reproduced primary source texts, images, and artifacts as well as the constructed historical narratives, accounts, or presentations that result from digital historical inquiry." The technology used to make digital historical sources can be helpful for historical researchers but also for teacher in the history learning. Norwich University (2020) describes the digital tools used for digital history to function to:



- Research, analyze, and visualize patterns in historical information.
- Present research findings and historical narratives in an enriched content format that is both informative and entertaining.
- Invite collaboration and enable various audiences to participate in the preservation and telling of stories.

History learning in the 21st century presents a challenge for teachers, with most students being Generation X. Meanwhile, the existing teacher candidates are primarily millennial. The use of technology in learning is a must so that there is a balance between teacher and student cognition which is increasingly digitized. Both generations are used to dealing with many sources of information. As Davidwitz (2018) puts it, "you don't always need a ton of data to get important insights. You need the right do not. What if the teacher has difficulty adapting students even mastering the discourse of learning media that they are already familiar with? Even, some teachers are still struggle to understand and use digital media such as PowerPoint and Google properly.

Generally, the availability of digital historical sources in Indonesia can be found on the websites of museums, government agencies, and universities. Concerning meaningful learning, the teacher acts as a link to connect existing digital sources to be narrated to students in the classroom. The amount of information easily obtained by students makes the teacher's role irreplaceable, even though learning is carried out online. The teacher's role is to present the right learning resources in the classroom. They can freely choose what data is appropriate to be presented or delivered, provided that it is in line with the material in the national curriculum.

In the 2013 curriculum, there are two categories for history subjects, namely Indonesian history, which is included in the mandatory category, and history of specialization groups. The two categories differ in content. Indonesian History subjects emphasize local and national events in Indonesia. Meanwhile, specialization history subjects position Indonesia more in global history. This difference needs to be understood by the teacher so that history learning is meaningful for students. In this paper, the following table will only show some of the selected topics as an example of how teacher may develop their digital history resources at the beginning. The examples given here are mostly in two types of language namely Bahasa Indonesia and English.

Table 1. The Classification of Historical Materials Based on Values and Digital Historical Sources

Class	Subject	Subject matter	Values	Digital Sources of History
X	IH	1. The origin/ancestors of the Indonesian people	Indonesia's interconnection with other nations	https://www.museumnasional.or.id/category/koleksi https://whc.unesco.org/en/tentativelists/5466/
XI	H	1. The meaning of the <i>preamble</i> of the 1945 Constitution 2. The Asia-Africa Conference	Live in unity as an independent nation.	http://asian africanmuseum.org/en/virtualmuseum/ https://www.delpher.nl/
XI	HI	1. The incoming of Western nations to Indonesia	Indonesia has a 'black pearl' appeal	https://digitalcollections.universiteitleiden.nl/ https://www.britannica.com/event/Bandung-Conference
XII	H	1. Indonesia's Role in the Cold War 2. The active role of the Indonesian people towards the Rohingyas	Participate in maintaining world order	https://trove.nla.gov.au/ (koran-koran lama, dokumen, terkoneksi dengan Arsip Australia)

Description: H – History; IH – Indonesia History

The relationship between digital historical sources and meaningful learning is the narrative used by the teacher in delivering the material in the classroom. Contextual approach in learning has the potential to be used for creating a meaningful learning. Students who have prior knowledge are connected to students' personal context and situations through digital historical resources. It can be accessed anywhere, anytime and mostly free of charge. Teachers' literacy skills in finding digital historical sources are another topic. They should provide a dedicated time to explore and conduct a preliminary survey on the internet on the suitability of the sources compare to student's cognitive and technical ability. But, this self-training will also make teacher more and more advance in digital-oriented learning skills.



The stages that need to be considered by teachers in implementing meaningful learning from Ausubel (2000) are (1) advance organizer, teacher should arrange a medium of knowledge transfer which are “organizers (that) are presented at a higher level of abstraction, generality, and inclusiveness than the new material to be learned.” It can be a graph, pictures, or artifact that visually easy to recognize; (2) Progressive differential, which, “the most general and inclusive ideas of the discipline are presented first and are then progressively differentiated in terms of detail and specificity”; (3) integrative reconciliation, is simply “explicitly indicating in what ways (student) previously learned, related ideas in cognitive structure are either basically similar to, or essentially different from, new ideas and information in the learning task.” One stage that is not less important is (4) Consolidation, in which teacher “makes sure of continued subject-matter readiness and success in sequentially organized learning. This kind of learning presupposes, of course, that the preceding steps are always clear, stable, and well-organized.”

How to apply these stages towards meaningful learning perhaps could be summarized as follows:

1. Advance organizer is used using photographs from Google searching engine or instructions to visit a specific website, maps.google, and any other online visual graphic materials. The teacher then stimulates students' existing knowledge using questions or challenging statements to recall their memory on specific aspects of the topics. After students show the attitude of interest, teachers use
2. Progressive differential, explains to students that today they will learn something new from their existing knowledge. The teacher explicitly concludes that their initial answer or understanding is not totally wrong but still incomplete. By explicitly stating the topic and the teacher's perspective on it, students will challenge their previous assumptions and be ready for possible new information.
3. Integrative reconciliation is used to convey and deliver the material from the curriculum and match it with prior student knowledge. If the differential means to contradict or against initial student knowledge, then in this step, the teacher reconciles the new and the old knowledge. It is easier for the teacher to provide proofs such as documents and pictures explained using the digital historical resources.



4. Consolidation is the last stage where the teacher starts to retreat from the classroom but still encourages the student with a critical view. They may ask the student what they think after comparing to before the classroom, or maybe ask them to some extent they agree or disagree with the teacher's explanation.

The condition of online learning is indeed a challenge for history teachers to manage classes effectively. Teachers are faced with a doubled workload even to understand the online learning platform to be used. Digital adaptation in dealing with the flow of abundant, fast, and sometimes excessive information means that teachers should get used to increase their capacity. Some practical strategies are reading newspapers or news sources, having global insights, adapting IT, being innovative and creative in using various types of media learning, and most importantly, not giving up on learning and facing the challenges. In addition, the skills of teachers in preparing lesson plans by linking various aspects, including materials, media, and evaluation tools, need to be shifted towards a student center-learner-oriented direction, as also promoted by Ausibel in creating a meaningful learning.

Discussion and Recommendations

Teachers can utilize digital historical sources to guide students accustomed to having broad access to information towards meaningful learning. These digital resources are widely available, most of which are English-language sites. This language factor may be a challenge and even an obstacle for teachers in using it. However, if the teacher is concerned about the development of the quality of learning, then there are many personal benefits for the teacher. One of them is getting used to actively using a foreign language. Optimization must be done to teachers and students. Teachers need to look at students' cognitive and possibly technical capacities in this adaptation of digital historical resource sites. Through the four-stage approach to meaningful learning from Ausibel, it is hoped that teachers can adapt digital historical sources into classroom learning both online and face-to-face. After all, a teacher must have global insight, be skilled in utilizing IT, be innovative, and be diligent in carrying out their duties as educators. In the future, a deeper and broader study should be conducted in the development of practical steps creating meaningful history learning that can easily being followed by teachers.



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