Examining Digital Humanities Tools Used by Taiwanese Historians with the Digital Visitors and Residents Framework

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Abstract. This poster examines digital humanities tools used by historians in research contexts based on existing literature, and examines five top-used tools with the digital visitors and residents framework that helps describe digital tools in two dimensions—visitor/resident and personal/institutional. Through delineating literature on humanities scholars' information practices throughout the decades, changes in historians' information behavior were identified. Top-five digital cultural heritage collections and tools used by historians were selected for case analysis based on the tools used in papers presented at a renowned digital humanities conference in Taiwan—the DADH. The digital visitors and residents framework was then used to examine the tools used by historians. The findings indicate that all three types of tools were institutional-level tools. Among which, primary source databases either encourage users to be visitors or residents; GIS/map systems tend to be a tool for visitors, and text analysis platforms tend to be a tool for residents. The poster concludes with implications for information professionals who support humanities scholars in research contexts.

Keywords: Digital Humanities · Historians · Humanities Scholars · Digital Visitors and Residents

1 Introduction

The field of humanities as a discipline is broad and diverse by nature. Among humanities scholars, historians rely on a wide variety of sources of information during their research processes. Examining digital humanities tools that support historians can help better understand how information professionals and database providers could support humanities research.

1.1 Information Use Behavior of Humanities Scholars

The information practices of humanities scholars may change as technology develops. Although humanities scholars seem to share some similar information behavior characteristics, such as relying on books, personal collections, and primary cultural heritage collections to contribute to knowledge construction [1–3], existing literature throughout

decades identified changes in humanities scholars' preferences for using digital tools. Research in the 1990s tended to emphasize the important role of library print materials, including primary sources, and discuss scholars may not be capable of utilizing databases or may not believe databases meet their needs [4] other studies focus on issues regarding the use of print versus digital sources [2].

In the first decade of the 2000s, digital cultural heritage collections have been playing an important role in humanities scholars' information practices in research contexts [5]. While historians continue to value information discovered through reading book reviews, browsing for comprehensive searches, and print materials, some changes in the advent of electronic resources have increased historians' use of catalogs and indexes in their efforts to identify appropriate primary and secondary sources of information [6]. In the latter half of the 2000s, research tended to focus even more on how humanities scholars use databases and digital resources [7–11].

In the last decade (the 2010s), research continued discussing digital tools and resources used by humanities scholars from different perspectives. For instance, Given and Willison found humanities scholars use a wide variety of digital tools in their digital research practices such as databases, repositories, search engines, software, and online services (e.g., communication tools, online storage services, text analysis tools, digital content creation tools, digital organization tools) [12]. Chen found that while books were still an important source, electronic resources also played an important role throughout the process of research [13].

While most research in different decades discussed how humanities scholars use digital databases or other technological tools, research in the 1990s tended to highlight the role of the library and library instruction as well as discuss why scholars tend not to utilize digital resources. Although research after the 2000s still emphasized how humanities scholars value print materials and primary sources, the research tended to depict how humanities scholars accept new tools at the same time. This phenomenon implies that it is worthwhile to further examine how digital resources and digital humanities tools may help scholars engage with the digital information environment.

1.2 The Framework of Digital Visitors and Residents

White and Le Cornu use the metaphor of digital visitors and residents to depict users who use an online tool without building profiles online versus users who see online tools as a place to leave traces and interact with others [14]. The framework of digital visitors and residents (V & R) was further developed by the University of Oxford, OCLC (Online Computer Library Center) Research, and the University of North Carolina, Charlotte; the framework was used to study learners at different stages, including secondary school students, undergraduate students, graduate students, and scholars and was later developed and expanded to study learners in various contexts [15]. This framework was developed as an operationalized visual elicitation approach and an online application to study how individuals engage with the digital information environment. The findings also provide practical implications [16].

While this framework was originally designed to prompt participants to position the digital tools they used in specific contexts onto a two-dimensional space—a continuum of modes in terms of visitor/resident and personal/institutional, since it provides two

spectrums to depict information sources and tools used by individuals, we can apply the framework to discuss any digital tool based on given information without eliciting specific personal accounts. Various applications and modifications can be found in the literature [17–19].

As Engelsmann et al. stated, it could be difficult to map all the behaviors to the framework, but the framework provides a solid foundation for in-depth discussions [19]. The main purpose of this poster is to discuss how digital humanities tools may help scholars organize information in their digital humanities research. Instead of eliciting humanities scholars' first-person accounts, this poster examines digital humanities tools used by scholars, as identified in the literature, with the digital visitors and residents framework.

2   Case Selection Procedure

The International Conference of Digital Archives and Digital Humanities (DADH) is a renowned digital humanities conference that has been held in Taiwan annually since 2009. In order to discuss commonly used digital cultural heritage collections and tools used by historians in Taiwan, the tools used multiple times in DADH papers presented by authors with affiliation at a department of history at a university or research institute were selected. According to the lists generated by the research centers for humanities at National Taiwan University and the Center for Digital Cultures at Academia Sinica, there are more than 50 digital tools. However, after excluding tools that no longer exist or can be accessed, only five tools were used multiple times by historians in the DADH proceedings.

The five digital humanities tools that have been identified for the case analysis include Taiwan History Digital Library (THDL), National History Database of Academia Historica, Taiwan Centurial Historical Map, Digital Humanities Research Platform, and Docusky Collaboration Platform. Information about the tools was gathered and consolidated from the official websites of these tools, the research centers for digital humanities and digital cultures, as well as the Humanities and Social Science Databases Catalog (HUSSCat). The main functions and features are presented in Table 1. The digital visitors and residents framework was then used to analyze the above tools. In the current context, digital humanities tools are all institutional tools, so the following discussions will focus on the visitors and residents continuum.

3   Findings and Discussion

3.1   Examining Digital Humanities Tools with Digital Visitors and Residents Framework

The above five tools used by historians in Taiwan reflect most of the digital humanities tools. Based on the nature of the digital humanities tools, we can identify three major types: (1) primary source databases such as THDL and National History Database, (2) GIS/map systems such as Taiwan Centurial Historical Map, and (3) text analysis platforms such as Digital Humanities Research Platform and Docusky Collaboration Platform.

Table 1. Features of digital humanities tools.

Tool	Creator (Institution)	Browse	Search	Text Analysis	Data Visualization	GIS	Collaboration	Visitor (V)/ Resident (R)
Taiwan History Digital Library (THDL)	National Taiwan University	v	v		v			R
National History Database of Academia Historica	Academia Historica	v	v					V/R
Taiwan Centurial Historical Map	Center for GIS, Academia Sinica	v	v		v	v		V
Digital Humanities Research Platform	Center for Digital Cultures (ASCDC), Academia Sinica	v	v	v	v	v	v	R
Docusky Collaboration Platform	National Taiwan University	v	v	v	v	v	v	V/R

Note: V means the user can only use the tool as a visitor; R means only as a resident; V/R means the users can use it either way

Figure 1 presents the digital humanities tools in the two-dimensional space based on the framework of digital visitors and residents. Regardless of the types of digital humanities tools, almost all digital humanities tools inherit a highly research-oriented purpose, and thus are mostly institutional on the y-axis of the spectrum in the framework of digital visitors and residents. Therefore, all three major types of digital humanities tools appear below the x-axis of the framework.

When further examining the top-used tools along with the tools listed on the Research Center for Digital Humanities at National Taiwan University and the Center for Digital Cultures at Academia Sinica, we learn that most are primary source databases. Among the three major types, primary source databases consist of a wide variety of materials. Therefore, the database design differs from not providing functions that help users become residents to those providing logins and collaboration to support users becoming a resident. The users may be able to choose whether they prefer to use the tool as a visitor or a resident.

While some of the text analysis platforms may provide options for users to try the platform with sample texts so that they do not need to leave too many traces on the platform, if scholars use the tool for research purposes, it is very likely that the user has to be a resident to upload the texts and do analysis. On the other hand, the GIS/map system in the current poster does not provide logins, and the users can only search for
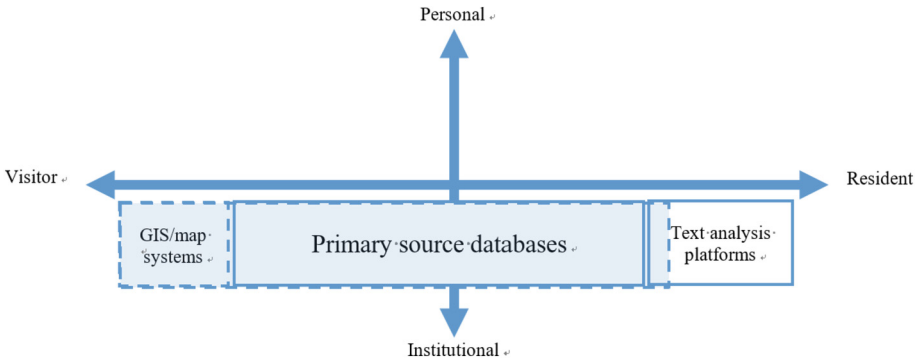
Fig. 1. Mapping Digital Humanities Tools with Digital Visitors and Residents Framework. Note: The shaded GIS/map system area represents the general GIS/map systems. The smaller GIS/Map systems on the left represent the tool introduced in this poster.

the maps. Although the system also provides external GIS tools, the GIS/map system itself tends to let users remain visitors.

Overall, GIS/map systems are typically designed for visitors to browse and use historical maps; text analysis platforms are typically designed for residents to save data and leave personal information. Primary source databases provide different functions with diverse purposes, and thus, can be designed either for visitors or residents.

3.2 The Current Use of the Digital Visitors and Residents Framework and Its Implications

Instead of using the digital visitors and residents framework to explore users' behavior, this poster attempts to apply the digital visitors and residents framework in a different way. Instead of eliciting first-account personal experiences from historians, the poster uses the digital visitors and residents framework at a meta-level by analyzing the tools used by historians from the researcher's perspective rather than from historians' personal accounts. While this meta-level discussion provides a different perspective on understanding information practices, this type of discussion cannot replace first-person accounts. Users' first-person accounts and meta-level discussions about the tools used by users are both important. That is to say, the framework of digital visitors and residents may not only help us understand scholars who use the tools but also help us contemplate the design of the tools.

Additionally, it is essential to develop digital humanities tools that accommodate different needs in terms of fulfilling both digital visitors and residents. There have already been a wide variety of primary-source databases developed in Taiwan. It is important to learn whether or not scholars need a wider variety of GIS/map systems and sophisticated text analysis platforms for different purposes. Maintaining primary source databases is not an easy task. The Research Center for Digital Humanities at National Taiwan University and the Center for Digital Cultures at Academia Sinica have been taking great responsibility for fulfilling sustainable development goals for the databases and have been developing new digital humanities tools. Building and sharing best practices

in maintaining established tools and developing new tools are critical to the field of digital humanities.

4 Conclusion

Information behavior changes as technology develops, especially when it comes to digital humanities-related contexts. Through reviewing relevant literature, we can see the changes. While most characteristics of humanities scholars exhibited in their information seeking behavior remain true, humanities scholars have become more aware and use various digital tools.

This poster examines the digital humanities tools used by historians at the DADH conference using the digital visitors and residents framework. Three major types of digital humanities have been identified, including (1) primary source databases such as THDL and National History Database, (2) GIS/map systems such as Taiwan Centurial Historical Map, and (3) text analysis platforms such as Digital Humanities Research Platform and Docusky Collaboration Platform. While primary source databases tend to either encourage users to be visitors or residents, GIS/map systems tend to be a tool for visitors. Text analysis platforms tend to be a tool for residents.

Future research may use the digital visitors and residents framework to explore the information practices of historians and other humanities scholars beyond Taiwanese contexts. Based on the current discussion, a survey and follow-up interviews based on the framework can be used to solicit first-person accounts from scholars.

In order to achieve a sustainable future of digital humanities, it is important to keep track of the changing practices in the field through learning the information practices of scholars and the tools they use through longitudinal research. This poster starts the dialogue and foresees that future endeavors from different stakeholders can continue collaborating to maintain sustainability in digital humanities research through understanding the changing patterns of humanities scholars and the tools they use.

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