CALL and DH: Why Do We Need Both?

Dongdong Chen
Seton Hall University
April 8, 2022

Dongdong.chen@shu.edu

Agenda

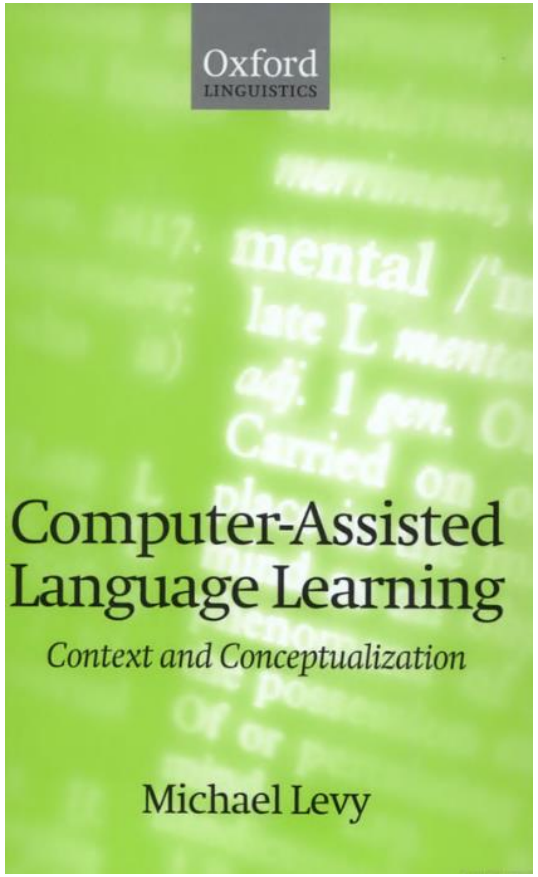
- CALL: Definition, Early history, Stages of development
- DH: What is it? Historical Milestones
- Why Do We Need both in L2 Classroom?

CALL: Definition, Early History and Development

Computer Assisted Instruction (CAI, Alpert and Bitzer 1970)
Computer Assisted Language Instruction (CALI)
Computer Accelerated Instruction (CAI)
Computer Accelerated Language Instruction (CALI)
Computer Aided Language Learning (CALL)
Computer Assisted Language Learning (CALL)

Computer Assisted Language Learning (CALL) has been generally preferred, as it emphasizes the learner-centered nature of the language learning process.

Levy (1997, p. 1) defines CALL as 'the search for and study of applications of the computer in language teaching and learning."



Teaching Chinese as a foreign language

COMPUTERS READY TO TEACH CHINESE

Seton Hall Will Use Machine to Instruct Its Students

By MALCOLM W. BROWNE

Special to The New York Times

SOUTH ORANGE, N. J., July 29—American teachers of Chinese may soon be learning their subject from computers instead of mandarin scholars, thanks to a Federal grant to Seton Hall University.

Prof. Wang Fang-yu of Seton Hall, who developed the system for teaching by computer, said the Seton Hall computer would be the first in the world to teach Chinese. In future developments, Chinese characters and the spoken language also will be taught by computer, he said.

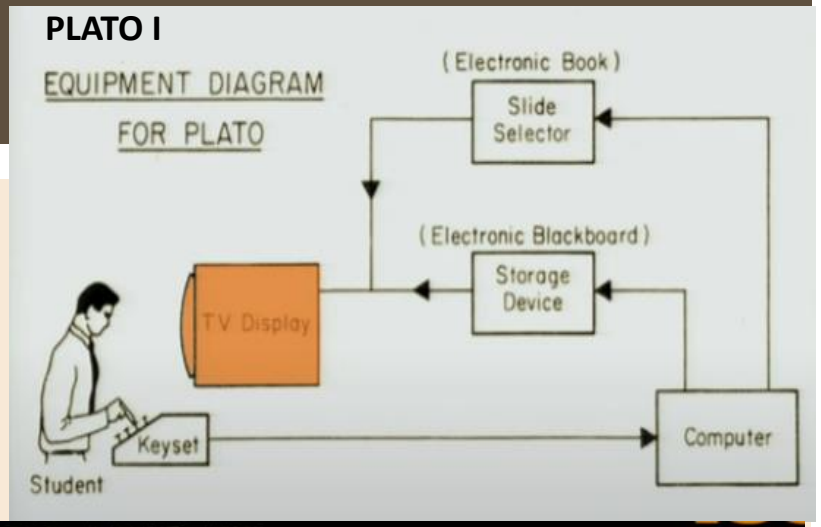
Federal funds under the National Defense Education Act and other provisions have been increased for Asian studies, especially languages, a university spokesman said.

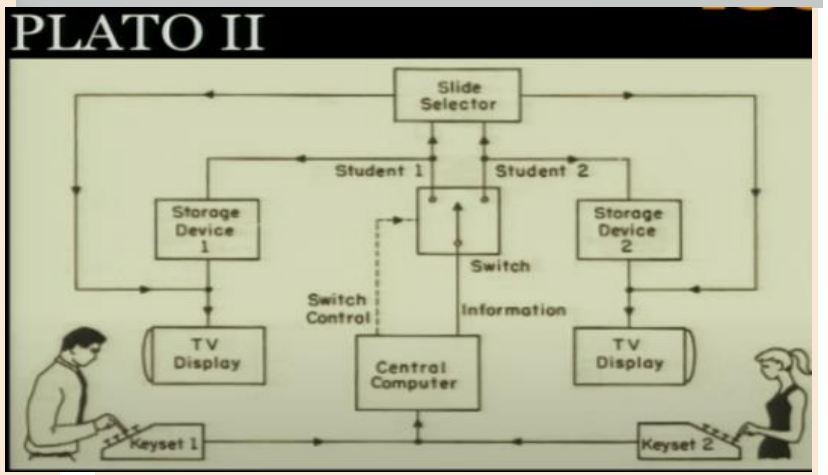
Seton Hall, which has four summer programs involved in teaching Chinese and Japanese to high school and college instructors, received $147,936 during the past fiscal year under the National Defense Education Act. This money is used for special equipment, such as the computer, projection and recording equipment and salaries.

The New York Times
Published: July 30, 1967

1960: PLATO （Program Logic for Automated Teaching Operation）

Created the first version of PLATO I in 1960





The Computer-Based Education Research Laboratory at the University of Illinois at Urbana-Champaign (UIUC) launched a mainframe computer instructional system to explore various educational possibilities (Alpert and Bitzer, 1970).

1. Is interactive
2. Provides correct answers
3. Informs the instructor of each student's performance for further assistance

https://distributedmuseum.illinois.edu/exhibit/plato/#:~:text=PLATO%20(Programmed%20Logic%20for%20Automated,initially%20led%20by%20Donald%20Bitzer

PLATO Covers Different Languages

Chinese, designed by Chin-Chuan Cheng of UIUC, created a system to teach Chinese, which comprises three components covering character writing stroke order, reading comprehension, and pronunciation (Cheng, 1973). Starting in 1970, Cheng and his colleagues endeavored to make the computer write in Chinese. Their stroke order lessons show students how a character is composed one stroke after another, and students are then allowed to practice writing each character if they wish to do so.

French materials, designed by Fernand Marty (1981), contain a four-semester series of French grammar and vocabulary, and additional lessons in French linguistics, geography, and culture.

PLATO: What it does; what it does not do

- PLATO enabled a large number of students to interact with the system simultaneously on a self-paced instruction basis. The communication between users was made possible in the form of note files, and talks.

- With PLATO taking care of mechanical drills with vocabulary and grammar outside class, students had more time in class for expressive and productive activities.

- By 1970, PLATO delivered 50,000 student hours of language instruction in a dozen languages, and 50,000 hours in other curricula.

- PLATO could not meet with all language learners' needs, especially in speech production and understanding.

1971: TICCIT (Time-Shared, Interactive Computer Controlled Information Television)

- This project, initiated in Brigham Young University, is a system that combines television technology with computer technology.
- The system includes hardware, software, and courseware.
- It has the capacity to incorporate text, audio, and video, considered as the first example of multimedia CAI.
- With a specially designed keyboard containing 15 learner control keys, the learner was empowered to select content and the presentational form. The 15 learner control keys, including Rule, Example, Practice, Advice, Objective, Easy, Hard, would allow the student to gain control over the content and the learning strategies, a central tenet of the TICCIT system.

Evaluation: PLATO and TICCIT

Murphy and Appel (1978) about PLATO:

> "The system provided a medium for instruction with substantial appeal to both students and instructors. The PLATO system had no consistent positive nor negative effects on student achievement nor attrition." (p. 16)

Alderman, Appel and Murphy (1978) about PLATO and TICCIT:

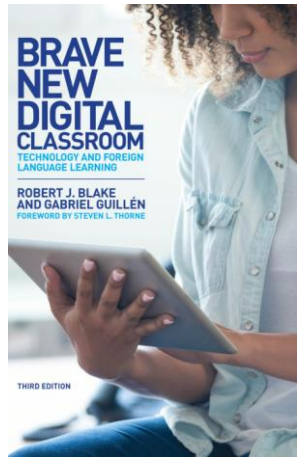
> "The PLATO system met with favorable reactions from teachers and students, but it had no significant impact on student achievement." (p. 44)
>
> "The TICCIT program did result in improved student achievement. However, the completion rate for courses under the TICCIT program was lower than the completion rate for the same courses under a lecture-discussion format." (p. 44)
>
> While a decrease in course completion rates for TICCIT was noted when comparing the courses under TICCIT with the same courses under a lecturer-discussion format, the completion rates and student attitudes improved when teacher's role expanded. This suggests the instructor effects on student learning.

Stages of CALL

Stage of CALL	Years	Characteristics	Spaces
Behavioristic CALL	1960s–70s	Explicit grammar	Mainframe computer
Communicative CALL	1970s–80s	Focus on usage	Personal computer
Integrative CALL	1980s–90s	Integration of skills and technology	Multimedia computer
Social CALL	2000s	Peer-to-peer learning	Social Web

Based on Warschauer & Healey (1998), Warschauer (2000), Thomas et al (2013)

Blake and Guillen (2020, p. 95). *Brave New Digital Classroom: Technology and Foreign Language Learning*



CALL Approaches

Bax (2003) observed inconsistencies and unclear criteria in Warschauer's (2000) classification of the four stages of CALL development. He examined CALL from different dimensions, i.e., theory of learning, teacher's roles, activity types, software, and proposed three approaches.

1. Restricted CALL (1960s – 1980s): overlapped with Behavioristic CALL

2. Open CALL (1980s- 2003): including Communicative CALL and Integrative CALL
   - Teachers' attitudes and administrators' attitudes to using computers are more open.
   - Instructors are able to use computers to engage students for communication along the lines of CLT due to the advent of internet technology, CMC, the web, email.

3. Integrated CALL (the present time):
   - Objective: "the normalization… in which CALL finally becomes invisible, serving the needs of learners and integrated into every teachers' everyday practice."
   - "We are still at the stage where the majority of teachers are nervous of it"

Bax (2003, p. 20-27)

Bax (2003) claims that the three approaches "coincide with three general historical periods."

What is DH (Digital Humanities)?

- In 2009, the Day of Digital Humanities project asked the question “What is Digital Humanities?”
- By 2015, the online platform https://whatisdigitalhumanities.com/ prompted over 800 answers or definitions (The site was made by Jason Heppler, a historian of modern America and Digital Engagement Librarian, University of Nebraska at Omaha.

  See the chapter “Selected definitions from the Day of Digital Humanities: 2009-2012” ofthe book *Defining Digital Humanities: A Reader* by Terras et al. (2013, pp. 279-287)), e.g.,

“Digital humanities are an interdisciplinary field working on the relations between humanities and digital technology.” - Ana Guzman

“It's using technology for humanities research, teaching, and publication.” - *Jana Remy*

“The use of technology to make teaching, research, and learning better, whether through new tools and ways of asking questions, or innovative new forms of scholarly presentation and communication.” - - Alan G Pike

“I think of 'Digital Humanities' is a vague and ambiguous term; in fact, I think it causes a fair amount of confusion both inside and outside of the academy. DH is an umbrella term that, depending on who you are talking to, covers a huge territory: everything from applied text analysis and corpus stylistics to the more esoteric and theoretical realms of video game criticism.”

- Matthew Jockers

More definitions

“DH is the use of digital tools in conjunction with and for the advancement/development of traditionally humanities skills: critical thinking, synthesis, reading, writing, analysis, and creativity.”

APC Application: Certificate in Digital Humanities and Data Studies, Seton Hall University

“Digital Humanities is most often conceived of as an “interdiscipline” welding together computing and the traditional humanities.”

Pitman and Taylor (2017, para. 5)

“Digital Humanities refers to new modes of scholarship and institutional units for **collaborative, transdisciplinary, and computationally engaged** research, teaching, and publication [including**]…**the opportunities and challenges that arise from the conjunction of the term digital with the term humanities to form a new collective singular.**”**

Burdick et al. (2012, p. 122)

What Does DH do? What Does DH Not do?

What is DH?

Using digital tools to enhance teaching, research and more to achieve special goals.
It covers different disciplines of traditional humanities.

What isn’t DH?

1. The mere use of digital tools for the purpose of humanistic research does not qualify as DH
2. The study of digital artifacts, new media, contemporary culture in place of physical artifacts, old media or historical culture is not DH.

Burdick et al. (2012)

“While DH pedagogy involves technology, not all technology- driven practices of instruction involve DH.”

Cro (2020, p. 19)

DH: Historical Milestones

- 1949-1970:
  Early stage, Roberto Busa embarked on a monumental task to create a concordance of St. Thomas Aquinas and related authors' works, 11 million words of medieval Latin. **A concordance program** was written to sort and organize the words under their dictionary headings (Hockey, 2004).
  The journal *Computers and the Humanities* was founded in 1966.
- 1970s-1980s:
  Consolidation the field of "humanities computing" started to consolidate to utilize the advances in computer sciences to facilitate complex statistical tasks in textual analysis (Hockey, 2004).
- Mid-1980s to Early 1990s:
  New Developments The advent of the internet technology pushes the wide dissemination of the ideas of the digital humanities, and also the training of humanists to participate in the field.
- 2004:
  The label "**Digital Humanities**" was accepted (Schreibman et al. 2004).
- 2007:
  The National Endowment for Humanities launched the online journal of ***Digital Humanities Quarterly***
- 2008:
  The National Endowment for the Humanities launched the **Office of Digital Humanities**
- 2017:
  Pitman and Taylor (2017) proposed a critical DHML (**digital humanities modern language framework),** arguing that ML and DH, which share similar issues, can help expand each objectives and disciplinary horizons.
- 2020:
  Davis, R. F., Gold, M. K., Harris, K. D. & Sayers, J. (2020). ***Digital Pedagogy in the Humanities: Concepts, Models, and Experiments***, MLA Commons, Modern Language Association.

CALL and DH: Are they the same?

NO, but they are interconnected in technology/digital tools and in content

I argue that CALL and DH are different in the following aspects:

- objective

CALL: enhances teaching and learning, making both more effective

DH: builds learners' knowledge and skills of the subject matter, and also emphasizes other skills

- methodology

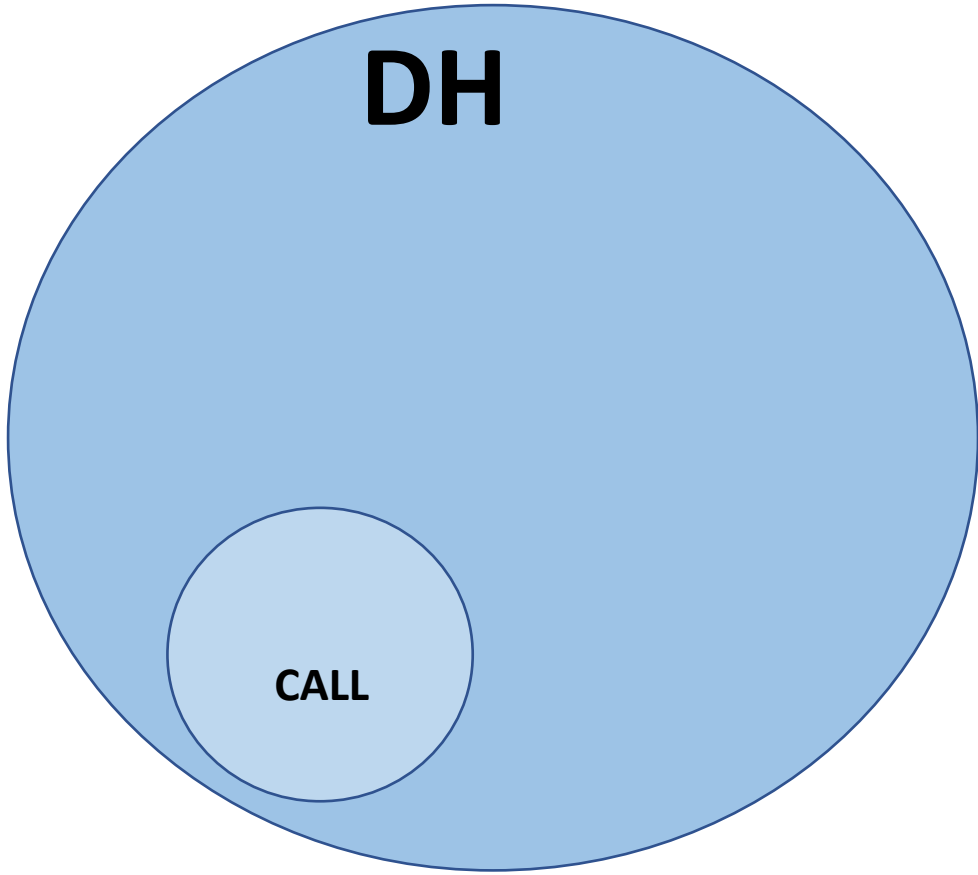
CALL: offers a tool to teachers or learners

DH: offers an approach with its own pedagogy, and engages students to **design and build** things through projects, and **share** with the public the discovery

- format

CALL: integrated in activities, assignments, tasks

DH: integrated in projects, which lead to final end products



DH and L2 Language Learning: Commonalities

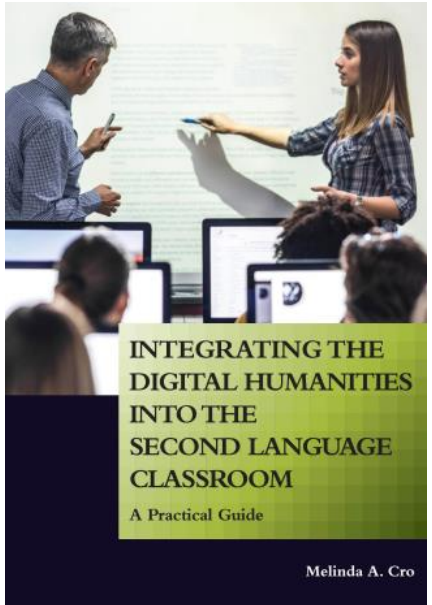
-DH is “described as a highly democratic method of engagement that destabilizes traditional notions of authority and leads toward a more open and cooperative model for scholarship and teaching.”

- Language learning is “a social, cultural, and cooperative practice that engages the same type of methodology and procedure as is endemic to DH.”

-“DHL2 methodology, while promoting language acquisition, describes more accurately a mode of instruction that capitalizes on the digital advances to facilitate collaborative and cooperative modes of learning while considering reflectively the act of building and making in a digital frame.”

Cro (2020, pp. 18-19)

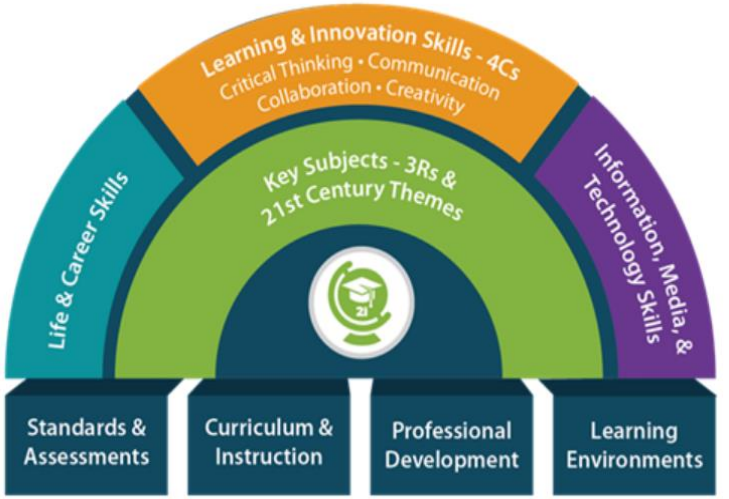
Integrating the Digital Humanities into the Second Language Classroom: A Practical Guide



Chen (2021)

- **We need both: CALL + DH**

- **What brings CALL + DH together?**
  Using **technology-enhanced Project Based Learning** (**TPBL**) to promote active learning by engaging students with meaningful, real-world projects to achieve 21st century skills, which are required by the *World-Readiness Standards for learning languages* (ACTFL, 2015).



- **What will CALL + DH brin to L2 Classroom?**

5C's + 4C's and IMT literacy

The combination of CALL and DH through technology-enhanced projects is an effective way to reconcile the standards with the skills.

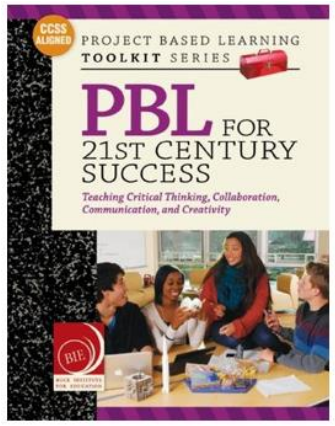
CALL: ➔ creates beneficial learning environment, which will empower the individual learning
builds students' literacy skills such as digital literacy, information literacy, and technology literacy

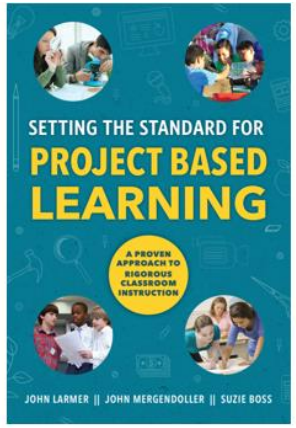
DH: ➔ creates a healthy and supportive classroom, which will help build learners' knowledge and skills of the subject matter;
emphasizes the cultivation of skills like collaboration, communication, critical thinking, and creativity, and the literacy skills such as information literacy, media literacy, and technology literacy

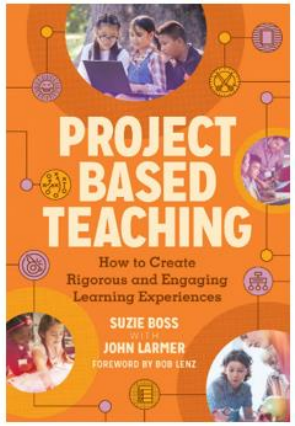
Why PBL?

The person with 21st century success skills is the one who is

- Problem solver
- Responsible
- Works well with others
- Can work independently
- Critical thinker
- Confident
- Manages time and work effectively
- Communicates well with a variety of people







Larmer et al., (2015, p. 1). *Setting the Standard for Project Based Learning: A Proven Approach to Rigorous Classroom Instruction.*

A. Golden standard PBL – 7 essential project design elements

B. Teaching practice for Golden standard PBL – 7 essential teaching practices

References

ACTFL. (2015). *World-readiness Standards for Learning Languages.*

Alderman, D. L., Appel, L. R. and Murphy, R. T. (1978). PLATO and TICCIT: An Evaluation of CAI in the Community College, *Educational Technology*, 18/4, 40-45

Alpert, D., and Bitzer, D. L. (1970). Advances in Computer-based – Education, *Science* 167 1582-1590.

Bax, S. (2003). CALL—past, present and future, *System* 31, 13–28.

Blake, R. J. and Guillen, G. (2020). *Brave New Digital Classroom: Technology and Foreign Language Learning*. Georgetown University Press.

Boss, S., and Larmer, J. (2018). *Project Based Teaching: How to Create Rigorous and Engaging Learning Experiences*, ASCD.

Browne, M. W. (1967). Computers Ready to Teach Chinese, *The New York Times*, July 30

Burdick, A., Drucker, J., Lunenfeld, P., Presner, T., and Schnapp, J. (2012). *Digital humanities.* The MIT Press.

Chen, D. (2021). Producing Podcasts in a Chinese Classroom: A Digital Humanities Project, *Chinese Language Teaching Methodology and Technology*, 4/1, 27-43.

Cro, M. (2020). *Integrating the Digital Humanities into the Second Language Classroom: A Practical Guide.* Georgetown University Press.

Davis, R. F., Gold, M. K., Harris, K. D. and Sayers, J. (2020). *Digital Pedagogy in the Humanities: Concepts, Models, and Experiments*, MLA Commons, Modern Language Association.

Hockey, S. (2004). The History of Humanities Computing. In *A Companion to Digital Humanities*, ed. S. Schreibman, R. Siemens, and J. Unsworth. Oxford: Blackwell.

Larmer, J., Mergendoller, J., and Boss, S. (2015). *Setting the Standard for Project Based Learning: A Proven Approach to Rigorous Classroom Instruction.* ASCD, 17 (2).

Levy, M. (1997). *CALL Context and Conceptualization*. Oxford University Press, Oxford.

Marty, F. (1981). Reflections on the use of computers in second-language acquisition — I, *System* 9/2, 85-98

Murphy, R. T, and Appel, L. R. (1978). Evaluation on the PLATO IV Computer-Based Education System in Community College. *ACM Sigcue Bulletin* 12/1, 12-28.

Partnership for 21st Century Skills (2009). P21 Framework Definitions, (ED519462), ERIC.

Pitman, T. and Taylor, C. (2017). Where's the ML in DH? And Where's the DH in ML? The Relationship between Modern Languages and Digital Humanities, and an Argument for a Critical DHML. *Digital Humanities Quarterly* 11/1.

Schreibman, S., Siemens, R. and Unsworth, J. (2004). A Companion to the Digital Humanities. Oxford: Blackwell.

Thank you!

dongdong.chen@shu.edu