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LEARNING AND SOCIO-CULTURAL THEORY: EXPLORING
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University Student Learning in Everyday Life
Activity: Place, Time, and Media

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Abstract

A lot of Japanese universities introduce some e-learning systems into their education. In this paper, we ask 22 female university/college students to report when, where, and what they do, and which kind of media/tool they use for their everyday life activities. We asked them to do this, every 15 minutes for a week. We also interview the students after their reporting everyday life activities, and analysis the log data of the system use. We describe students' activities in their everyday life and learning. We discuss the meaning of students' learning activities, especially activities using the e-learning system and other information and communication technology in their everyday life from the perspective of Vygotsky's ideas of media/tool. Some implications for future research are outlined.

UNIVERSITY STUDENT LEARNING IN EVERYDAY LIFE ACTIVITY: PLACE, TIME, AND MEDIA

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Abstract

A lot of Japanese universities introduce some e-learning systems into their education. In this paper, we ask 22 female university/college students to report when, where, and what they do, and which kind of media/tool they use for their everyday life activities. We asked them to do this, every 15 minutes for a week. We also interview the students after their reporting everyday life activities, and analysis the log data of the system use. We describe students' activities in their everyday life and learning. We discuss the meaning of students' learning activities, especially activities using the e-learning system and other information and communication technology in their everyday life from the perspective of Vygotsky's ideas of media/tool. Some implications for future research are outlined.

Introduction

ICT and Human Life

Due to the recent development of ICT (Information Communication Technology), people can input, process, and output various information. This has led to changes in human everyday life (Takahashi and Yamamoto, 2002).

Human everyday life activity is in information ecology and complex network system (Takahashi & Kurose (2004) and Takahashi (in press)). Our research is inspired by Vygotsky's idea of psychological tools (Vygotsky, 1979) and Gibson's idea of affordance and his ecological psychology (Gibson, 1979). People have various activities which include throwing out garbage, using public transportation, caring for babies/children and so on. People use a lot of media for doing these things. Fig. 1 represents the network of garbage collecting and throwing as an example of everyday life activity (Takahashi & Kurose (2004)). The City government office also provides a lot of media for people's usage. Usually people use calendars to throw out garbage on a fixed date. People take the calendar from the city office web site. When people want to throw an

old big wood desk, people phone the city office to ask when and how to throw the desk. City office staff provides the customers with tips telling them that they can throw out the desk as part of their usual garbage by cutting the desk into small pieces.

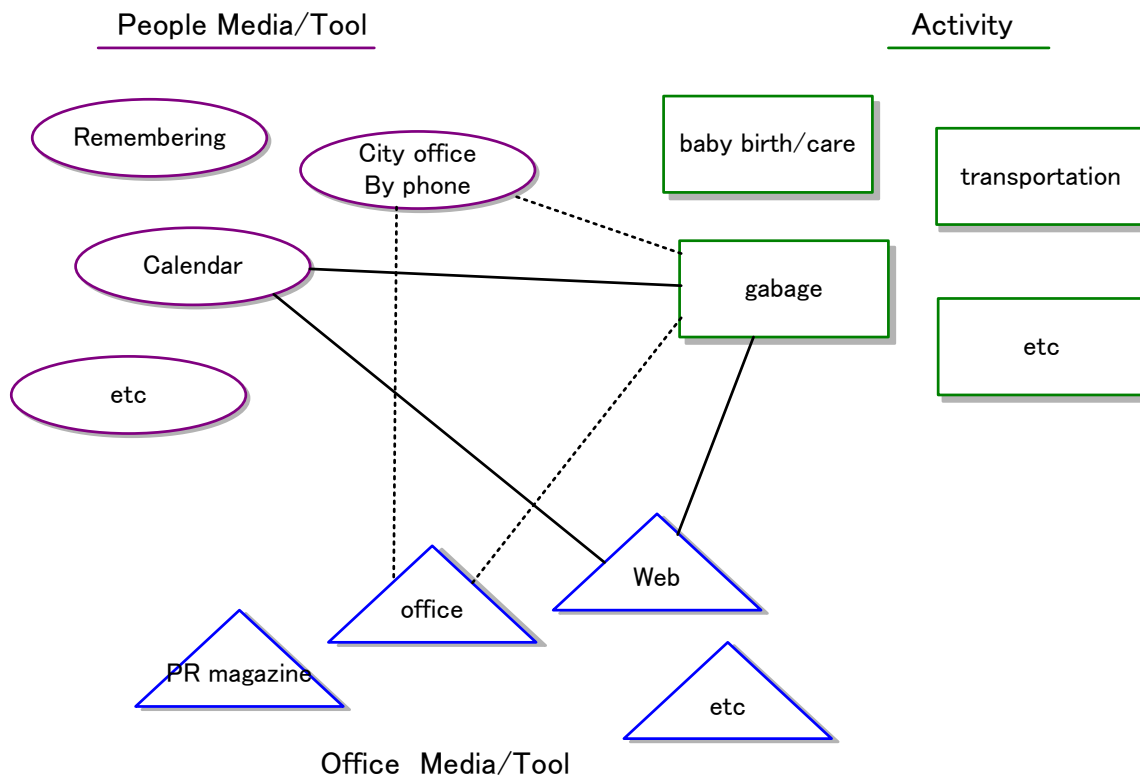


Fig. 1 Information ecology of garbage collecting and throwing

ICT and Human Life Design

How to design the product and/or service for human life in this changing age? Recently human-centred design is important. Fig. 2 represents the summary of ISO 13407 "Human-centred design processes for interactive systems". This human-centred design has four key activities:

1. Understand and specify the context of use
2. Specify user and socio-cultural/organizational requirements
3. Produce design solutions
4. Evaluate designs against requirements

We, as psychologists, have mainly two roles in this recycled design process. Firstly, understanding and specifying the context of use, if possible requirement analysis too. Secondly, usability and evaluation.

Science is also changing. It has changed from researcher-oriented to participant/user-oriented, collaboration of researcher and participant, situated, and more practical. This science change also demands an ethnographic design approach more and more. This changing age has led us to take an ethnographic design approach towards human-centred design activity more and more.

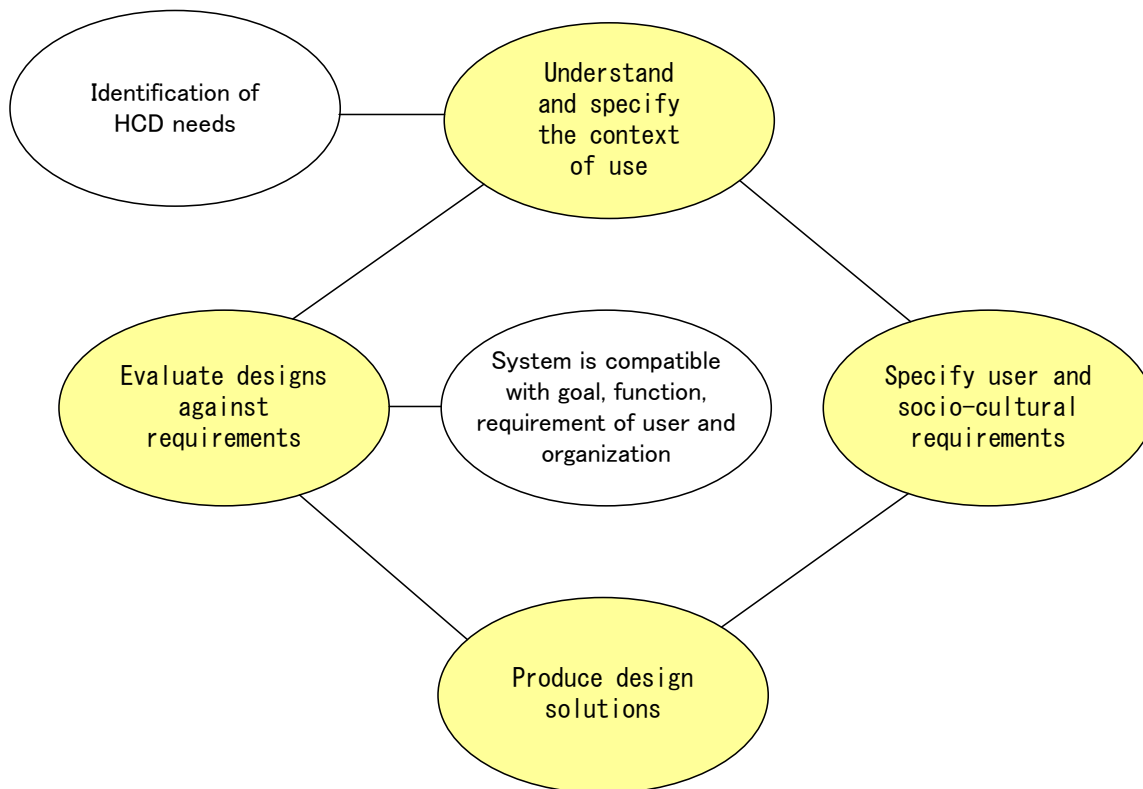


Fig. 2 Human-centred design processes

ICT and Education

Education is also changing in this age. Education is changing from knowledge acquisition to collaboration, from classroom to out of classroom activity. Recent mobile and ubiquitous technology is changing education to ubiquitous teaching and learning more and more. Education needs to be designed from all of these aspects, that is, systems of education, media/tools for education, contents of education, and so on. We have to design education for all people including students, teachers, staff, and all taxpayers.

Goal and Focus

The final goal of our project is the development of guidelines for introducing e-Learning system to be used in a Japanese University. Many Japanese universities have already introduced

e-Learning systems, but they have insufficient performance and some troubles. Other universities have some plans to introduce e-Learning systems. These universities need some guidelines for introducing and using e-Learning systems.

The focus of this study is to describe student everyday life activity and learning from the perspective of information ecology. Our approach is an ethnographic one. We will do some requirement analysis of e-Learning system users, especially students.

Method

Participants

Participants are 22 students of a woman's university/college. They attend the information education classes of the same instructor. The teaching method of the classes is in mixed fashion, mainly face-to-face teaching, and e-Learning system introduced. Participants' university/college is a small one located in a very big city in Japan.

E-Learning System

WebCT is used. Students can access some instructor-made materials, quiz, questionnaire, term report. Students can also chat between instructor and students.

Procedure

Self-report of everyday life activity by mobile phone and web-log. Participants are firstly asked to report what, when, where, and with which kind of media/tool they do every 15 minutes from wake-up to sleep for 1 week via their own mobile phone. Participants are also asked to take some photos using a mobile phone camera, if possible. When their activity is continuing, participants can report it after their activity is finished.

7 participants report their activity via spreadsheet (Excel) format once a day by e-mail attached file, because their own mobile phones are incompatible with web-log system. We communicate with participant via web-log/e-mail to verify the report quality.

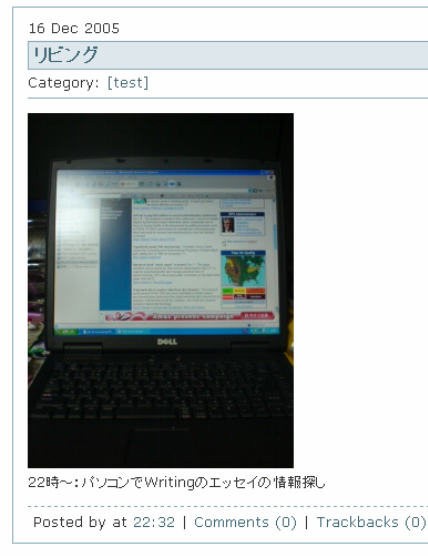


Fig. 3 Example of self report via mobile phone and web-log

Fig. 3 is an example of self report via mobile phone and web-log. This example is an excerpt from web-log software. This example represents following items:

- Date posted: 16 Dec 2005
- Subject: At living room
- Photo: face of PC
- Text: from 22:00, information seeking for writing class by PC
- Time posted: 22:32
- Comments and Trackbacks: none

Fig.4 is an example of self report via Excel format. This is originally Japanese. This example represents that when (hour and minute), where (place), and with which kinds of media the participant does (behaviour and text).

Record of my behavior				
12, Dec				
hour	minute	place	behavior	text
0	0	home	learning	English words power up
	15	home	sleep	
	30	home		
	30	home		
	45	home	wake up	
7	0	home	breakfast	
	45	Tsurubashi rail station	exchange from Kintetsu to JR	
9	0	University, Library	seeking materials	for Writing Class
	15	#401	collecting information	for Writing Class
13	0	#505	Grammer Class	
	15	#505	Grammer Class	
	30	#206	Gospel Club Practice	for Christmas concert
	45	#206	Gospel Club Practice	

Fig.4 Example of self report via Excel format

Interview after self reporting. Participants are asked to participate in a quasi-structured interview after they have finished 1 week of self reporting while checking their reports. Interviews took from 30 minutes to 1 hour and included the following items;

- tips for self reporting: for example, some participants bring memo pad to remind them of their activity and at what time it took place, some participants use some format in mobile phone for easy input of same style.
- Mobile phone usage history: Almost participants have used some mobile phones. We asked them why they decide that type of mobile phone, why and how they change from old phone to new one, and so on.
- Learning in home: We asked participants to draw rough sketch of their home and its rooms. And we asked them where in home are they most frequently, where in home and with which kind of media/tool do they learn and why do so, and so on.
- Activity on transport between University and home: We asked participants to tell how to get to university from their home with railway map. And we asked them what and with which kinds of media/tool they do on transportation.

Log data of e-Learning system usage. Log data of e-Learning system usage was also analysed.

Interview of instructor and staff. We also conducted interviews with the instructor of the information education class and some other staff at the university/college.

Results and Discussion

Basic Results

All participants in this study go to university from their parents' home, by public transport (bus, train, and subway), cycling, and/or walking. This is not unusual for small university/college at a big city in Japan. And all participants are members of some university/college clubs and/or some work in part-time jobs. This means that participants are very busy because not only are they learning but are also participating in club activities and/or paid work.

Learning Place at University

Participants' place at university is class room, computer room, audio/visual room, library, and food court. These places are usual ones as university/college. A unique place in this university/college is a self-study room, called "Sassi". The formal name of this room is SASSC (Self Access and Study Support Center). The University opened SASSC as a development centre for student's English ability. Technical and OG staffs support students for almost all things including not only English development but also IT problems. Almost all the participants reported "go to Sassi when they have time". "Sassi" is a comfortable place for almost all students, "tamari-ba" in Japanese.

Learning Place at Home

At home, all participants have their own room, with their own desk and computer. But almost all participants included things such as learning in living room, some participants sleep in the same living room. Some participants bring all their learning materials and laptop computer to the living room. Almost participants told that the living room contains their fathers' newest computer, so they can access the internet faster, and play DVD's on the computer. They also told that they are comfortable in living room with their family, talking with their family, watching TV, and having dinner.

Learning on Transportation

Almost all participants learn by iPod, especially for English pronunciation class and sometimes for English listening class when they go to university. Some participants use same iPod to listen to their favourite songs. Some participants learn by textbook and notebook. And almost all participants communicate with their friends by mobile phone, mail on public transportation when they come back to home from university and/or part-time job.

Media/Tool for Learning

For some of the tasks in their information education class, participants have access to e-Learning system using home and/or university PC, but they also have to go to the library and meet with instructors to collect and review some learning materials. Going to the library, meeting with instructors, and reading materials involve face-to-face media and real media usage.

For all participants, e-Learning system is not a unique media/tool. They recognize e-Learning system as one of computer usage.

Mobile Media/Tool for Learning

iPod. As already mentioned almost all participants use iPod for English learning, and some used the same iPod for private fun. The participants' university/college recommends students and their parents to buy iPod at the entrance to university/college because of the English power up.

Electronic dictionary. All participants use electronic dictionary for English learning. Some participants use the same electronic dictionary for other language learning. All participants told that real dictionary is heavy, and the electronic dictionary has many functions, for example, it speaks the accurate pronunciation, it has a lot of figures, and is light to transport around.

Mobile phone. All participants use mobile phone mainly for communicating with some friends via the mobile phone's mail function. They use mobile phone to contact the instructor via the same mail function. They also seek information for learning and other things via the mobile phone internet access function.

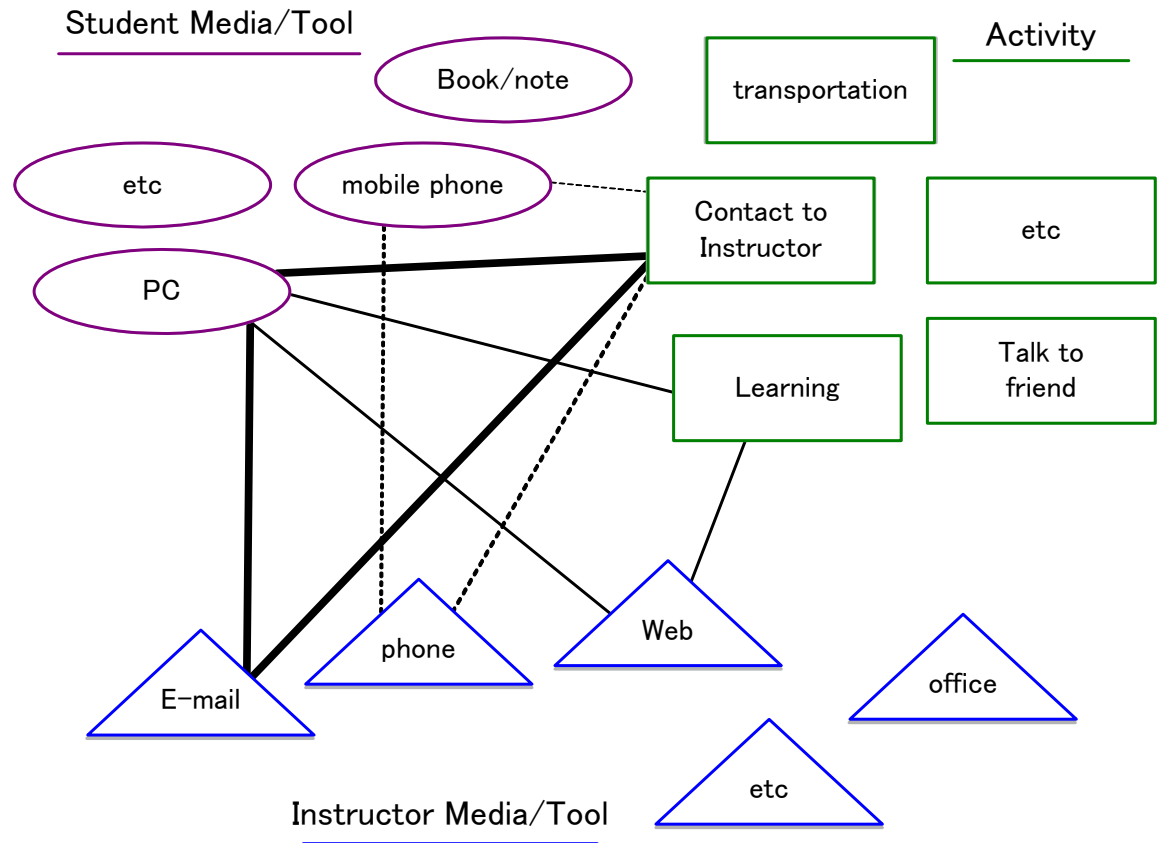


Fig. 5 Information ecology of students' everyday activity and learning

Information Ecology of Students' Everyday Activity and Learning

We have described participants' everyday activity and learning. Participants use various media to do a lot of things, including learning in various places and times. We can describe their activity as network with media layered by place and time. Fig. 5 represents student's mobile phone and computer usage as an example. Participants participate in various activities including learning, talking to friends, and so on. They use a lot of media for doing these things. The university/college office and instructor also provides a lot of media for the student's service. When a student wants to contact the instructor, she usually uses her mobile phone mail. But when she does learning on her home computer, she uses the same computer to contact the instructor via computer e-mail software, because she does not want to disrupt her learning activity on the computer, and because she has plenty of time to wait for the instructor's reply. Activity network is constructed with mainly user's comfort, and is changed by constraint of place and time.

Requirements for E-Learning System

We tentatively want to try requirement analysis for e-Learning system especially from the student's point of view. First of all, student learning is already in ubiquitous learning style. Student use various ready-made products, media/tools to do learning in every time and place where they feel comfortable to do so. E-Learning system needs to be compatible with student's learning time and place.

Secondly, the room called "Sacci" means that university class uses e-Learning more frequently, student need real face-to-face communication and support. This is one aspect of the universal service in general.

Lastly it is open question whether e-Learning system has to integrate all functions of various media or not.

Limitations and Future Research

Because of methodology of self-report and interview, we have almost no data about the interaction between participants and other students and instructors. We can only say that participants interact with others. We can not analyse how they interact with others, and why they do so.

We also found it difficult to analyse log data of e-Learning system usage. It is especially difficult to analyse the difference between e-Learning and real learning performance. We may use ubiquitous technology to collect these data about interaction and real learning performance automatically in the future.

The last limitation of this study is the sampling of participants. All participants go to university/college from their parents' home. This is not usual in some small university/colleges in a big city in Japan. Thus this sample is cannot be generalised to others Japanese universities/colleges. We would have to collect data from participants who live alone for example.

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