

# ICT & Collaborative Learning

## ~ Collaborative Learning between Kansai University & University of Hawaii ~

Bert Y. Kimura<sup>\*1</sup>    Mary E.O. Kimura<sup>\*2</sup>    Curtis Ho<sup>\*1</sup>    Kenichi Kubota<sup>\*3</sup>

### Abstract

Kansai University students majoring in educational technology are provided opportunities to increase their teamwork skills and intercultural competencies through authentic learning, group work and collaborative projects, including a collaborative video project with University of Hawaii graduate students. These experiences are integrated into the ICT For Learning class taught each fall semester in the Faculty of Informatics.

Keywords: collaborative learning, ict, video project, intercultural competency

### 1. Introduction

This report is the result of teaching a graduate class, ICT For Learning, at Kansai University in the Faculty of Informatics in the fall semesters, 2010–2013. In this class, instructors affiliated with the University of Hawaii engaged students from both classes to form teams that collaborate to produce a video that compares technologies and cultures between the two countries, Japan and USA.

The results presented described outcomes from the past three years. The class has evolved rapidly in response to changes in educational technologies and the continuing evolution of ICT and Web 2.0 (O'Reilly, 2005) technology tools. Since 1995, numerous studies have identified potential benefits from the application of such tools in teaching and learning (Ertmer, et. al., 2011; Redecker, Ala-Mutka, Bacigalupo, Ferrari, & Punie, 2009). Additional details are provided for the mostly recently completed class in Fall 2013.

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<sup>\*1</sup> University of Hawaii

<sup>\*2</sup> Forum for i-Learning Creation

<sup>\*3</sup> Kansai University

## 2. ICT for Learning

### 2.1 Description

ICT for Learning is a one-semester class that meets once a week, designed and presented by Professor Bert Kimura, Emeritus Professor of the University of Hawaii and Lecturer at Kansai University in partnership with Professor Curtis Ho, Educational Technology Department Chair in the College of Education at the University of Hawaii, Professor Kenichi Kubota, Faculty of Informatics at Kansai University, and Mary Kimura, MS Stanford University, and former Associate Professor in Foreign Languages (English) at Osaka Gakuin University.

Web 2.0 has brought new services, tools and user-created content to the Internet. It is changing teaching, learning, and creativity in education. In this class, students use these technologies and discuss how such technologies will help students gain 21st Century learning skills.

Recently, educators have valued outcomes from collaborative learning activities because it provides authentic tasks that lead to deeper learning, and higher levels of cognition as described by Bloom (1956). Reeves, Herrington, & Oliver (2004) describe learning from collaboration on authentic problems as having outcomes “of the highest order, including improved problem-solving abilities, enhanced communication skills, continuing intellectual curiosity and robust mental models of complex processes inherent to the performance contexts in which their new learning will be applied.”

Authentic learning through collaboration has components of using knowledge in real life, supporting collaborative construction of knowledge, promoting reflection to enable the formation of abstraction, articulating ideas to enable the explicit formation of knowledge and assessing the learning of tasks (Reeves, Herrington, & Oliver, 2002).

Therefore, the instructional design for the ICT for Learning class is centered around collaboration and authentic learning pedagogical principles.

Each topic included readings, demonstrations, use of technologies, and a group discussion. Students completed team activities to demonstrate authentic learning.

Additionally, this class was taught in English to enable improvement in written and spoken English. The students also gained familiarity with English terms used in modern technology.

### 2.2 Students

The students included a combination of formally registered graduate students as well as invited undergraduate students. All students complete the same learning assignments and often work together in teams.

### 2.3 Schedule of topics

The content for this class is based on recent advances in higher education that is described in the annual Horizon Reports (Johnson, Adams, & Cummins, 2012; Johnson, Adams Becker, Cummins, Estrada, Freeman, & Ludgate, 2013) published jointly by the New Media Consortium and the Educause Learning Initiative, two leading non-profit educational associations in the United States.

Table 1 below lists the weekly topic and assignments for the ICT for Learning class in 2013.

**Table 1. Course schedule, ICT for Learning, 2013**

Week	Topics	Assignment
1	Introductions Technology emphasis - ICT & Web 2.0 Collaboration introduction Internet accounts - Google+	Introduce your classmate Begin to make introduction video with Screenr Create new accounts if needed (Google), Start Google+ Write a reflection or comment about class.
2	What is educational technology? What is Web 2.0? Social Media (SNS) Collaboration & team work Narrated video sharing <b>Hawaii-Kansai University            collaboration video project</b> (Introduction) Brainstorming practice Check Google profile and privacy Learn Google+ Present introduction video (Screenr)	- Google Docs - Google+ hangout - Dropbox Practice with Google+ hangout
4	Web 2.0 communication tools - Skype (screen sharing) - Twitter - Instagram (picture sharing) - Pinterest (bookmarking) - Snapdish (food sharing) - Language translation tools	UH videoconference (Oct 12, special session, 1200–1330). Decide on team name, timeline and communication plan. Prepare Google document for your collaboration video team Create and use Twitter account Explore Skype, Instagram and Pinterest features Test translation tools
5	Intellectual property, reuse & remixing Creative Commons Multimedia resources	Review online multimedia resource web sites Submit collaboration video project title, description and storyboard to Google+ Submit progress report #1 on collaboration video Write reflection about collaboration video
6	E-Textbooks	Learn to use iBooks Author.
	NO CLASS	Submit progress report #2 on collaboration video.
7	Online translation tools including mobile applications RSS, feed aggregators	Upload completed collaboration video to Google+ Comment on team videos (by Nov 18) Explore mobile feed aggregators.
8	Augmented reality	Share collaboration experience during videoconference (Nov 20, special session) Explore AR applications. Write reflection about AR
9	Open Education Resources (OER) Massive Open Online Courses (MOOC)	Explore online sites such as MIT Open Courseware, TED Talks & Khan Academy.

Week	Topics	Assignment
10	Curate the web - Storify - Glogster - Scoop.it!	Explore desktop and mobile applications Present augmented reality project.
11	Learning Unit Project Learning styles Bloom's taxonomy Online brainstorming	Create a lesson plan, decide on target audience Write educational objectives for lesson plan Outline lesson steps and timeline for lesson plan Explore online mindmapping tools
12	Learning Unit workshop Presentation tools Introduction to Virtual Worlds	Write learning assessment strategy & evaluation criteria for lesson plan. Include web 2.0 technology in lesson plan Review web 2.0 presentation tools Prepare Second Life account and avatar
13	Virtual worlds & Second Life (Dr. Peter Leong)	Experience Second Life Read Horizon Report 2011
14	Assessment and evaluation	Complete lesson plan Review mobile content aggregation tools
15	Review course Learning unit completion Course evaluation	Learning unit presentations Complete all assignments & projects Complete course evaluation survey

## 2.4 Discussion and Information Sharing

In order to promote interaction among students and to review the work of others, an online classroom learning community was implemented using a Google+ community. Students posted information about their work, links to their class assignment products or shared personal reflections about the assignments. The instructors also posted PDF copies of class presentations and handouts so that students could download the information and review the content, especially where Internet links are provided.

To maintain weekly contact with students, the instructional faculty utilized LINE, a highly popular mobile smartphone application used by college students, for sending text messages and images. Naver, the Tokyo based company for LINE, reports that there are over 300 million users (Torres, 2013). It is the fastest growing and most popular messaging application in Japan.

As a consequence, no formal training is required to engage students with using LINE, saving valuable classroom time to discuss more important concepts and issues.

## 2.5 Student presentations

Students in ICT for Learning routinely make 4–6 presentations during each class. Team projects are presented by all team members. In 2013, student presentations included a personal introduction in English (using screen capturing software), YouTube videos for the Kansai-Hawaii collaboration project, videos created with an online application, a mashup using multiple media, smartphone mobile news readers, augmented reality videos for a map of the Kansai University Takatsuki and

Senri campuses, and designing a collaborative learning project that was included as a chapter in an e-book.

In the beginning, students were taught about Western speaking styles for making presentations when speaking in English, including body language, eye contact, and having confidence. Since Professor Kubota's graduate students are required to make English presentations at international conferences, these tips and experiences were designed to provide practice opportunities for future presentations.

## 2.6 Evaluation

A course evaluation designed specifically for this class was administered. Data from the surveys conducted from 2011–13 are summarized in Tables 2–4 and Figure 1. Details of the survey results for 2013 are provided in Appendix A.

In general, the course was well received by the students. Even students, who were invited, but not registered formally for the class, attended class regularly and completed assignments.

Students consistently indicated that the instructors were knowledgeable about the content (Table 2, C1), explained assignments clearly (C3) and rated the class very high in comparison to other classes at Kansai University (C4).

**Table 2. Quality of classroom instruction**

YEAR	N	C1	C2	C3	C4
2011	10	4.70	4.60	4.80	4.80
2012	5	4.60	4.40	4.80	4.60
2013	7	4.86	4.57	4.71	4.57
TOTAL	22	4.73	4.55	4.77	4.68

N - Number of student respondents, mean score = 3.0

C1 - The instructors are knowledgeable about the course content.

C2 - The instructors made class expectations known from the beginning of the course.

C3 - The instructors explained class assignments clearly.

C4 - How would you rate this class compared to other classes?

As discussed in more detail below, the students were positive about collaborating with University of Hawaii students to produce a team video (Table 3, V1-V3). Additionally, students were positive about applying what they learned by designing a collaborative learning unit of their own choice and expanding their knowledge of presentation tools by making a presentation in English (L1, L2).

**Table 3. Participation in CVP (V) and designing a learning unit (L)**

YEAR	N	V1	V2	V3	L1	L2
2011	10	4.11	4.22	4.00	4.00	4.10
2012	5	4.00	4.20	4.40	4.25	4.75
2013	7	4.00	4.43	4.14	4.57	4.57
TOTAL	22	3.86	4.09	3.95	4.05	4.18

N - Number of student respondents, mean score = 3.0

V1 - When I participated in the CVP, I learned about technology for learning

V2 - I learned more about collaboration when I participated in the CVP.

V3 - I learned about students in other countries.

L1 - When I designed my learning unit, I could find ways to use technology for learning.

L2 - I learned more about different presentation tools because I participated in the project

ICT for Learning enabled students to develop a deeper understanding of ICT and Web 2.0 technology tools while gaining more confidence in using such tools for teaching and learning applications. Students also felt that they extended their range of abilities with regard to using these modern technology tools (Table 4, T1-T3).

**Table 4. Use of ICT and Web 2.0 technology tools**

YEAR	N	T1	T2	T3
2011	10	4.60	4.50	4.50
2012	5	4.60	4.00	4.60
2013	7	4.71	4.57	4.86
TOTAL	22	4.64	4.41	4.64

N - Number of student respondents, mean score = 3.0

T1 - My understanding of using ICT and Web 2.0 tools for learning is higher than the first day of class.

T2 - I have more confidence using ICT and Web 2.0 tools than the first day of class.

T3 - I can do more things using ICT and Web 2.0 tools than the first day of class.

Notable student comments from Fall 2013 included:

- I think the instructors and contents are very good. Because both instructors understand Japanese students about language difficulties, interests and attitudes, and contents treated in the class are always new. In some parts, we used the same tools that we used last year but we could help the new students. That builded collaboration.
- [A collaborative project is ...] interesting because I learned not only how to collaborate with foreign students but also how to involve other members on the Japanese side.
- [When collaborating with Hawaii students ...] to try to know partners is important because we have different culture and thinking. If we don't understand them, it might be conflicting. Partners are in a different country. Time difference is also a factor.
- [Designing a learning unit is ...] interesting. It required our creativity. We cannot see this

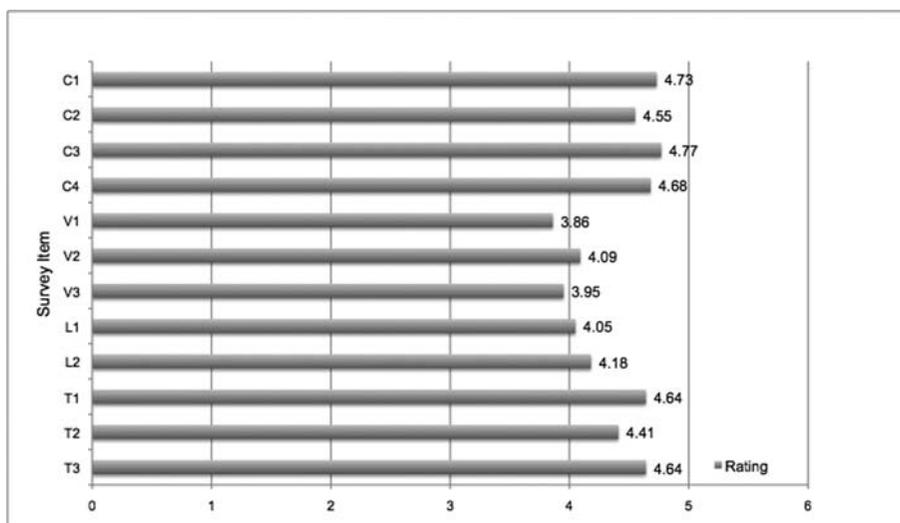


Figure 1. Combined evaluation survey data, 2011-2013 (N=22)

characteristic in other university classes.

- [When designing a learning unit, the most important thing learned] is to have imagination and curiosity!
- I want to be a teacher, it [Web 2.0] could be of use in the class. People live with others, so collaboration is [an] important thing in life.
- I would like to support intercultural learning in Japan and other countries. At that time I will use or propose appropriate tools in the project.
- It [Web 2.0] will help me when I communicate with other country people. I want to make connections with people all over the world.
- [Future use] How to collaborate with people using ICT. ICT tools let us collaborate more easily and feel closer however distant we are. We need to adapt to the new technology so that we do not make the partners uncomfortable.
- [My] fear of English has been reduced in ICT4L. Thank you very much :)

### 3. Kansai University - University of Hawaii Collaboration

In the ICT for Learning class, students completed a collaborative team video project (CVP) by producing a short video related to the use of modern technologies among students in Japan and Hawaii. The students used a variety of Web 2.0 technologies such as Skype, Dropbox, Google Hangouts, Google Docs and Facebook to exchange information.

All students received an orientation about time differences, academic schedules, technology access, levels of technology skills, language proficiency, cultural differences in communication techniques, decision-making and problem solving styles. For example, students were instructed to specify times by indicating Hawaii or Japan standard time.

Students were assigned to a team by the faculty. For the Japanese students, each team minimally consisted of one student with high English proficiency and one with good technology skills. Typically, there were 5–6 teams each year.

### 3.1 CVP Process & Procedures

Japanese students practiced using Google+ hangouts to collaborate during in-class activities before meeting with Hawaii students. This increased their comfort level of using the technology and communicating in English. Students became more aware of difficulties when communicating online, such as microsecond delays when speaking, awkwardness of seeing their faces while they spoke English and the need to prepare before each meeting.

Initial videoconferences were held during a class session on Google Hangout or Skype. Student team members introduced themselves, selected a team name, decided on a topic for their video and drafted a short storyboard. Further meetings were scheduled by students themselves outside of class to exchange ideas, plan and produce their videos.

After five weeks, student teams uploaded the final video to YouTube and linked to a Google+ community, Kansai-Hawaii Collaboration Project, where students could review the final videos produced by other teams and provide feedback asynchronously through the Google+ community.

Faculty assessed student progress and difficulties by reviewing a Google document and weekly reflections by students. The project provided students with authentic learning experiences where they used Web 2.0 tools to increase their knowledge and utilize skills learned in class in real-life situations. Students found that ICT in an authentic setting increased their awareness of the advantages and disadvantages of collaborating online with people from a different culture.

### 3.2 CVP Examples

The following YouTube videos (Figure 2) are examples of final products submitted by various teams of students:



Figure 2. Collaborative video examples produced by students.

### 3.3 CVP Evaluation

In the fall 2010 semester, a formal survey was administered to 17 US and 14 Japanese university students that were engaged in the CVP as a course assignment.

Due to their busy personal schedules and the difference in time zones, the data showed that finding the time to communicate was the biggest challenge for both US and Japanese graduate students. Nevertheless, the students adopted various strategies for effective communication based on

available group resources. All seven groups achieved the initial project objective successfully.

Although research literature showed that the difficulties with technologies generally inhibit participation in online communities and thus negatively influence performance (Guldberg & Mackness, 2009), our data indicated that the Japanese members' English language proficiency as well as satisfaction with the levels of interactions with other group members were two important factors influencing their outcomes.

Finally, based on the survey data, two crucial conditions that need to be in place in a cross-cultural setting were required preliminary assignments for team building and establishing a clear structure and project guidelines.

Additionally, we have found that students who participated in the CVP realized the need for good leadership, time management, scheduling in different time zones and selecting tools that best facilitated communication. A good leader helped to facilitate teamwork and provide direction for the project. One student expressed the desire "to study English more so I can be a leader of this project." The quality of the final product often reflected the leadership and ability of the group to work as a team (Kimura, Kimura, Ho & Kubota, 2012).

When working in virtual teams, effective time management is important. Busy schedules with full-time jobs, family responsibilities and differences in time zones often resulted in lack of timely response from group members. Students stated that "time management" and "team management" were important when collaborating online.

Japanese students stated that learning to speak English actively and without fear aided their communication. Another stated that the project provided a "nice practice to improve my ability to use English and Web 2.0 tools." When synchronous communication proved difficult, some students resorted to asynchronous tools that allowed for language translation and provided more time to compose replies. However, one student stated that sending text messages and email lessened the sense of community and involvement with the project.

Other comments from students about the CVP included:

- "I think CVP is great curriculum for us. because I tried to communicate with English and I knew new ICT tools. Thanks so much!"
- "I overall was glad to participate in this assignment and would like to do this again."
- "This was a wonderful learning experience about collaborating with students at a distance and at a time difference."

Despite difficulties encountered by Japanese students when collaborating in English, these activities provided authentic situations for students to use Web 2.0 tools to increase their intercultural awareness and enabled researchers to observe how online communities evolve. The Japanese students overcame these difficulties through perseverance, effort, and the desire to communicate in

English.

Additional information regarding the ICT For Learning class is described in a paper presented at the JAEMS 2012 Kenkyukai in Nagoya (Appendix B).

#### 4. TCC Worldwide Online Conference

Graduate students that participated in the ICT for Learning class were invited to present general sessions at the annual TCC Worldwide Online Conference (<http://tcchawaii.org>). The event is attended by 1,500 faculty and staff worldwide from 12–18 countries and features 80–100 presentations annually.

This international virtual conference has been held entirely online for the past 19 years. It is sponsored by TCCHawaii.org (<http://tcchawaii.org/about>), a Hawaii non-profit corporation dedicated to providing faculty and staff development opportunities through worldwide collaboration with faculty in higher education (Kimura & Ho, 2008). The conference offers participants with a high quality, but low-cost opportunity for professional development, while continuing to perform daily instructional duties with only minimal interruption. All sessions are recorded, thereby allowing participants to review sessions that were missed, unlike a traditional face-to-face conference.

For 2014, the conference is scheduled for April 22–24 (<http://2014.tcconlineconference.org/>).

The conference is held in partnership with the University of Hawaii's Educational Technology Department, College of Education (<http://etec.hawaii.edu>) and LearningTimes of New York (<http://www.learningtimes.com>). Approximately 70 faculty from numerous colleges and universities volunteer as advisory and editorial board members and session facilitators.

The conference accepts presentations in two formats: Peer reviewed papers and general sessions. All presentations are made in English.

Conference papers are published in the TCC Online Paper Proceedings (<http://etec.hawaii.edu/proceedings>). These proceedings are also searchable and available in the EdITLib (Education and Information Technology) Digital Library (<http://EdITLib.org>), sponsored by the Association for the Advancement of Computing in Education (AACE).

Presently, two keynote plenary sessions and three regional sessions are scheduled for the conference. Regional sessions are timed for presentation at the speaker's 14:00 local time, while keynote sessions are scheduled at 14:00 Hawaii time.

The conference coordinators strive to select plenary session speakers that are highly regarded in the field of educational technology, in particular, e-learning and in modern pedagogy for teaching and learning. In 2013, the conference featured Dr. Terry Anderson, Professor and researcher in the Technology Enhanced Knowledge Research Centre at Athabasca University, Canada's Open

University; and Alan Levine, a leading educator in digital storytelling and online learning, and former Vice President of the New Media Consortium. Regional speakers included Dr. Adrian Cheok, Professor at Keio University, Japan, a leading researcher in multisensory Internet learning; Dr. Albert Sangra, Professor and Director of the eLearn Center at the Universitat Oberta de Catalunya (Open University of Catalunya); and Dr. Jackie Gerstein, Professor, who teaches online courses in educational technology for three American universities: Boise State University, Walden University, and Western Governors' University.

The conference holds presentations for a wide range of topics, including but not limited to the following:

- Perspectives and experiences with emerging learning technologies
- Case studies in using ICT and Web 2.0 tools in learning
- Enabling student collaboration, creativity, and sharing
- Building and sustaining communities of learners
- E-books and other modes of content delivery
- Instructional applications in virtual worlds
- Educational game design and applications
- Distance learning programs and practices
- Open education and knowledge creation
- Massive open online courses (MOOC)
- Social media tools and applications
- Ubiquitous and lifelong learning
- Gender equity and open access
- Assessment of online learning
- Mobile learning applications
- Social and connected learning
- Open educational resources (OER)
- Online student services and advising
- Blogging and micro-blogging experiences
- Professional development for faculty and staff
- Global access and intercultural communication
- Educational technology in developing countries
- Projects for seniors and persons with disabilities
- Online collaboration tools for teaching and learning
- Online learning resources in libraries, learning centers, etc.
- Massively multiplayer online role-playing games in education

- Augmented reality; blending virtual content in real environments
- Online, hybrid, or blended modes of technology supported learning

Nine sessions by Kansai University students that completed ICT For Learning were presented over the past three years (2011–2013):

- (1) *Using SNS Effectively for Cross-Cultural Collaboration*, Ayuka Nakagawa, 2013
- (2) *Advantages and Disadvantages of Mobile Learning in Overseas Fieldwork Using an iPod Touch*, Shiho Okuda, 2013
- (3) *Supporting Study Abroad Students: A Case Study of a Study Abroad Program in the Philippines*, Sohei Daifuku, 2013
- (4) *The Case Study of the Effects Utilizing ICT Tools in Education for Health-Impaired Children*, Shiori Ueda, 2012
- (5) *Case Study of Japan and Cambodia*, Seiichi Hirakawa, 2012
- (6) *The Research on How High School Students Interact on SNS During Class: Case study of Japanese High School*, Jumpei Tokito, 2012
- (7) *Teaching with Facebook at a Japanese University*, Seiichi Hirakawa, 2011
- (8) *How Web 2.0 Tools Support Student Learning*, Ayako Morishima, 2011
- (9) *A Study on the Effects of Inter-School Collaborative Learning with Overseas Students Using ICT*, Jumpei Tokito, 2011

These sessions provided conference participants with a greater understanding of research being conducted at a Japanese university as well as an opportunity to interact with researchers from another culture.

#### 4.1 Conference Evaluation

Ho, Kimura & Boulay (2011) completed a data analysis compiled from five years (2006–2010) of TCC conference evaluations that shows that the ratings were consistently very high for key conference indicators: content, theme, a sense of community, interaction among peers and comparison to face-to-face event (Appendix C). More than 75% of the conference participants agreed that this virtual event is equivalent to or better than a face-to-face conference.

Results from the TCC 2013 conference evaluation survey are provided in Appendix D.

## 5. Conclusion

Through the ICT For Learning class and the TCC Worldwide Online Conference, students specializing in educational technology at Kansai University's Faculty of Informatics, are provided authentic learning opportunities in the study of modern educational technologies in a global context.

The Kansai-Hawaii Collaborative Video Project enables students to collaborate with their peers in Hawaii to gain valuable experience in teamwork, communications, and in intercultural competency. Students improve their oral communication skills in English and raise their motivation to improve their English speaking abilities.

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## Appendices

Appendix A. ICT for Learning, Course Evaluation Summary Results, 2013

Download copy of survey report:

<https://dl.dropboxusercontent.com/u/3573563/kandai2013/ICT4L%20Evaluation%20Survey%20Results%202013.pdf>

Appendix B. Paper presented at JAEMS 2012 Kenkyukai in Nagoya

Download copy of paper: <https://dl.dropboxusercontent.com/u/3573563/jaems/JAEMS2012kenkyukaipa-per3a-final.pdf>

Appendix C. IJEMTS 2010 paper

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Appendix D. TCC 2013 Evaluation Summary 2013

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