Development, Distribution and Publishing of Cross-media Learning Content for Lifelong Learners

Tsuneo Yamada,
The Open University of Japan

ASEM Forum on Lifelong Learning 2012
Copenhagen, Danmark
May 29, 2012
The Open University of Japan (OUJ)

- **Semi-governmental** institution
- **Distance education** institution
  “Anytime, anywhere”
  - Multi-delivery channels (**public digital broadcasting**, printed materials, **Internet**)
  - F2F mode schooling (2,600+ courses/year)
  - Online supports (telephone/Web)/offline (F2F) supports at **regional study centers**
- National center to promote **Open Education** and **Lifelong Learning**
  “Anyone is welcome”
  - No entrance exam (undergraduate courses)
- **Liberal Arts** institution
  - Growing needs for Practical Abilities
The Faculty of Liberal Arts comprises five areas of study unconstrained by conventional academic fields, enabling subject selection from a broad range of academic disciplines.

- **Living and Welfare**: 5,220 students
- **Psychology and Education**: 4,558 students
- **Society and Industry**: 3,374 students
- **Humanities (Humanity) and Culture**: 3,229 students
- **Nature and Environment**: 1,284 students

Bachelor’s degree: 124 credits (20 credits in F2F mode)
Created for those seeking to become “highly skilled 21st century professionals”.

Graduate School of Arts and Sciences

- Human Life and Health Science
- Human Development Science
- Clinical Psychology
- Social and Management Science
- Culture and Information Science
- Natural Environmental Science
BACKGROUNDs AND contexts:
DIVERSITY AND VARIABILITY
Students / Learners

- Vast learner spectrum
  - 1/3 of OUJ students are 50 years old +
  - Full-time to part-time
  - No requirements for admission on academic backgrounds

- Different comfort zone in learning spaces
  - Delivery channels
    - Printed materials to smart phone
  - Learning styles
Attributes of Enrolled Students

at Faculty of Liberal Arts including Special Auditing Students:

as of the 1st semester, 2009
Attributes of Enrolled Students

at Faculty of Liberal Arts including Special Auditing Students:

Educational Background:
- Elementary school/junior high school: 1.4%
- University/Graduate school: 27.4%
- Junior college/Technical college: 26.5%
- High school/High school under the old system: 44.7%
- Former youth school: 0.04%

Occupation:
- Unemployed (including homemakers): 20.2%
- Nurses: 19.9%
- Office workers: 18.2%
- Civil service: 8.6%
- Part-time workers: 8.4%
- Others: 7.9%
- Students from other universities: 6.7%
- Teachers: 4.8%
- Self-employed workers: 4.8%
- Farming: 0.5%

as of the 1st semester, 2009
Study Centers in 50 Locations
Nationwide

- Fukui Study Center
- Tottori Study Center
- Tokushima Study Center
- Nagasaki Study Center

- Schooling
- F2F mode courses
- Credit certification examinations
- Library
- AV room
- Student supports extracurricular activities

The total number of F2F mode courses was 2,645 (1st semester: 1,313, 2nd semester: 1,332 in 2010)
Delivery of course materials: Broadcasting Courses

- Main delivery media
  - TV/Radio broadcasting (Terrestrial & BS Digital, open content)
  - Printed textbook (proprietary content)

- Supplementary media (closed)
  - Video/Audio streaming
  - PDF version of textbook (pilot)
  - DVD package
## Number of broadcasting Subjects in FY2011

<table>
<thead>
<tr>
<th>Total</th>
<th>1st Semester</th>
<th>2nd Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TV Subjects</td>
<td>Radio Subjects</td>
</tr>
<tr>
<td>Total</td>
<td>169</td>
<td>157</td>
</tr>
<tr>
<td></td>
<td>326</td>
<td></td>
</tr>
</tbody>
</table>

| The Faculty of Liberal Arts (Undergraduate) | 139 | 120 | 139 | 119 |
| The School of Graduate Studies             | 30  | 37  | 30  | 38  |

<table>
<thead>
<tr>
<th>TV Subjects</th>
<th>Radio Subjects</th>
<th>TV Subjects</th>
<th>Radio Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>259</td>
<td></td>
<td>258</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td></td>
<td>68</td>
<td></td>
</tr>
</tbody>
</table>
Number of courses available online (streaming) in FY2011

<table>
<thead>
<tr>
<th></th>
<th>TV Subjects</th>
<th>Radio Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>71 (ca. 40%)</td>
<td>199 (100%)</td>
</tr>
<tr>
<td><strong>Undergraduate</strong></td>
<td>67</td>
<td>119</td>
</tr>
<tr>
<td><strong>Graduate</strong></td>
<td>4</td>
<td>38</td>
</tr>
<tr>
<td><strong>Special Lectures</strong></td>
<td>0</td>
<td>42</td>
</tr>
</tbody>
</table>
Interactiveness: Critical requirement for distance education

- Some prototypic practices
  - Internet-based teleconference system for online seminar
  - Combination of SNS and Web-based teleconference system for supervising the graduation thesis studies
  - LMS (moodle)
Online student supports: Campus portal

✓ “System WAKABA”
  Administration system/Personal record (e-portfolio-oriented)/Class registration

✓ “Campus Network”
  Announcements / G-mail / Video-Audio streaming of broadcasting content /LMS /Learning tips and reference information (past graduation study....)

✓ Online library services
  Reference services / e-books / e-journals and ...

✓ Campus life Q/A
One of our main purposes of ICT applications is to prepare for the diversity of learners and their learning processes.
NEW LEARNING SPACE
M-LEARNING
UPONET: Remedial courses for independent learners

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
<th>iPad Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remedial Chemistry</td>
<td>教科書選択の問題集（東京書籍）を素材とした中学・高校レベルの学習内容です。 iPadでも学習できます。</td>
<td>Yes</td>
</tr>
<tr>
<td>Remedial Physics</td>
<td>教科書選択の問題集（東京書籍）を素材とした中学・高校レベルの学習内容です。 iPadでも学習できます。</td>
<td>Yes</td>
</tr>
<tr>
<td>Remedial Biology</td>
<td>教科書選択の問題集（東京書籍）を素材とした中学・高校レベルの学習内容です。 iPadでも学習できます。</td>
<td>Yes</td>
</tr>
<tr>
<td>Remedial Math</td>
<td>教科書選択の問題集（東京書籍）を素材とした中学・高校レベルの学習内容です。 iPadでも学習できます。</td>
<td>Yes</td>
</tr>
<tr>
<td>TOEIC® Start</td>
<td>TOEIC®に挑む学習者のためのTOEIC®教材です。相關書籍「Over the TOEIC Barrier」でTOEIC®500、600、7000教科書学んだ後、ステップアップに取り組んでいます。 iPadでも学習できます。</td>
<td>Yes</td>
</tr>
</tbody>
</table>
UPONET: USER platform

✓ Courseware for independent learners (no credits)
✓ Mainly, Moodle
✓ Mobile learning (from Autumn 2011)
  ✓ Html5-based templates
  ✓ Compatible with flash content of iPad/iPhone
波はこうして進む

ホイヘンスの原理

波が到達すると媒質が振動する。その各媒質の振動が波源となって、球面波（素元波）を出す。ある時刻の波面上の各点から出る素元波を重ね合わせると、次の時刻の波面ができるという考え方。

この考え方で、波の屈折、反射、曲折を説明することができる。
「ホイヘンス」はオランダの数学者・天文学者の名前。

(a) 平面波

(b) 円形波（球面波）

波の進行方向

現れる波面

現れる波面
UPONET project: Junji SHIBASAKI and Hidenori SUGIYAMA
Screenshot of iPAd: DRILL

UPONET project: Junji SHIBASAKI and Hidenori SUGIYAMA
Screenshot of a mobile phone

- for PC
  - https://nurse.ouj.ac.jp/pc
- for Mobile phone
  - https://nurse.ouj.ac.jp/m/

- Content
  Drill for National Examination for Nursery Licence

UPONET project: Junji SHIBASAKI and Hidenori SUGIYAMA
DEVELOPMENT AND DISTRIBUTION: TOWARDS PERSONALIZATION
Requirements

- Sustainable
  - Open philosophy/concept
  - Compatible with proprietary resources
  - Quality improvement

- Versatile
  - Reuse/Remix
  - Context free
    - e.g. Multi-lingual/cultural or Pluralistic contexts
OUJ contributions to JOCW community

- As a JOCW(OCWC) member
  - OUJ-OCW site
    - Launched in October 2010
    - Video streaming of courseware
      - TV(video) 4:
      - Radio (Audio) 8:
      - Special Lecture 5:
  - JOCW Search and GLOBE
    - From October 2006 (Started by NIME)
    - 2804 metadata of JOCW content
JOCW-Search: Advanced Search

JOCWコンテンツ検索システム

keywords
course title
media
language
CC license
JOCW-Search: Search Results

http://keyaki.code.ouj.ac.jp/mt/lorsearch.cgi?app=jo
cw&limit=&q=Japanese%E3%80%80language&btn=
%E6%A4%9C%E7%B4%A2&ti=&u=&lc=

Japanese language の検索結果 6件中 1 - 6件目

LANGUAGE BEYOND GRAMMAR, Fall 2007

Mastering the grammar of a particular language does not guarantee a successful communication with a native speaker of that language. This is because language does not only function as a conveyance of information, but also has other functions such as expressing the language user's attitude/emotions. The objective of this course is to encourage a more profound understanding of the functions of language that exist beyond referential meaning, with particular attention given to markers and their uses in Japanese. An understanding of this aspect of language, and the function of particular markers, will lead to a deeper understanding of communication in Japanese in general. This course comprises three main parts: (i) general review of the non-mainly reviewing markers such as you know and like (date, maa, nan(ki),...); (ii) http://ocw.dmc.keio.a

CC License

日本語の話し方はと言外の意味 (2007春秋学期)

Mastering the grammar of a particular language does not guarantee a successful communication with a

http://ocw.nagoya-
u.jp/index.php?lang=en&mode=c&id=22&page_type=
index
Global Learning Object Brokered Exchange (GLOBE)

September, 2004

European Union

education.au

eduSourceCanada

MERLOT

February, 2007

Australia

LORNET

OUJ-CODE

February, 2007

September, 2007

February, 2010

April, 2008

September, 2008

March, 2009

April, 2008

September, 2008

March, 2009

October, 2010

C()SL

OER Africa
GLOBE: An international consortium for reuse and sharing

- Cross-Institutional search system of quality learning content and information beyond borders (minimum quality assured)
- Exchange and Sharing of **METADATA**
- Value-added services (right, recommendation, ...)
- Movement of global coverage, all school level
  - International level
  - Nation-wide level
  - Institution level
  - University repository level
Federated Search (GLOSS)

SQI: Simple Query Interface

1. Search keyword 「Science」

2. Query learning object include keyword "Science"

3. Return search result

4. Query learning object include keyword "Science"

5. Return search result

6. Display after the merge of search results

SQI Server

edNA API

LORNET

MERLOT API

SQI

MERLOT

edNA

NIME glad

SIMPLE QUERY INTERFACE (SQI)
Harvesting (GLOSS)

OAI-PMH Harvester 894,430
From ARIADNE: 620,751
LRE: 187,722
ESPOL: 40,957
OERcommons: 30,903
Keris: 7,294
LORNET: 2,296
OU-Japan: 2,804
OER-Africa: 1,703

OUJ OAI-PMH Repository
http://lor.code.ouj.ac.jp/oai/OAI-script
NEW CONTENT PRODUCTION FRAMEWORK MATERIALS REPOSITORY
Why smaller granular materials?

- Learning process
  + Prepare courseware for **Localization and Personalization**

- Development process
  + Limited financial and human resources (Shrinking budgets, Decrease of enrollment…)
  + Multiple media delivery (broadcasting, digital textbook, Internet, ….)
  + **Reuse and sharing** of quality materials (Broadcasting quality)
# Learning object: Granularity

<table>
<thead>
<tr>
<th>Preferable Unit</th>
<th>Learner (End-user)</th>
<th>Teacher Developer Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business / Distribution Model</td>
<td>Courseware</td>
<td>Materials (Video, Photos, Sounds) Learning Object (Module)</td>
</tr>
<tr>
<td>Right Management</td>
<td>B to C</td>
<td>B to B</td>
</tr>
<tr>
<td></td>
<td>Attribution No Derivative Works</td>
<td>Derivative Works</td>
</tr>
</tbody>
</table>
“material” content repository

- A repository designed for the materials for developing broadcasting program and course materials
- Broadcasting video/audio quality
- IEEE LOM metadata with extensions for describing right and quality information
- Global exchange framework of metadata under GLOBE initiative
- A pilot repository launched in an academic field
## metadata for reuse & Sharing

<table>
<thead>
<tr>
<th>No.</th>
<th>Metadata element</th>
<th>Corresponding element to LOM (IEEE 1484.12.1-2002)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ID of the metadata</td>
<td>3.1 Meta-Metadata - Identifier</td>
</tr>
<tr>
<td>2.</td>
<td>ID of the LO¹</td>
<td>1.1 General - Identifier</td>
</tr>
<tr>
<td>3.</td>
<td>Title</td>
<td>1.2 General - Title</td>
</tr>
<tr>
<td>4.</td>
<td>Language(s) used within the LO</td>
<td>1.3 General - Language</td>
</tr>
<tr>
<td>5.</td>
<td>Description</td>
<td>1.4 General - Description</td>
</tr>
<tr>
<td>6.</td>
<td>Keyword(s)</td>
<td>1.5 General - Keyword</td>
</tr>
<tr>
<td>7.</td>
<td>Aggregation level</td>
<td>1.8 General - Aggregation Level</td>
</tr>
<tr>
<td>8.</td>
<td>Contributor to the LO</td>
<td>2.3 Life Cycle - Contribute</td>
</tr>
<tr>
<td>9.</td>
<td>Language of the metadata</td>
<td>3.4 Meta-Metadata - Language</td>
</tr>
<tr>
<td>10.</td>
<td>MIME media types of the LO</td>
<td>4.1 Technical - Format</td>
</tr>
<tr>
<td>11.</td>
<td>URL</td>
<td>4.3 Technical - Location</td>
</tr>
<tr>
<td>12.</td>
<td>Technical requirements to use the LO</td>
<td>4.4 Technical - Requirement</td>
</tr>
<tr>
<td>13.</td>
<td>Educational stages²</td>
<td>5.6 Educational - Context</td>
</tr>
<tr>
<td>14.</td>
<td>Intended learning time</td>
<td>5.9 Educational - Typical Learning Time</td>
</tr>
<tr>
<td>15.</td>
<td>Intended user of the LO</td>
<td>5.10 Educational - Description</td>
</tr>
<tr>
<td>16.</td>
<td>Paid-for or free</td>
<td>6.1 Rights - Cost</td>
</tr>
<tr>
<td>17.</td>
<td>Restriction of usage</td>
<td>6.3 Rights - Description</td>
</tr>
<tr>
<td>18.</td>
<td>Classification³</td>
<td>9. Classification</td>
</tr>
<tr>
<td>19.</td>
<td>Copyright⁴</td>
<td>-</td>
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<td>20.</td>
<td>Quality⁵</td>
<td>-</td>
</tr>
<tr>
<td>21.</td>
<td>Permission to Harvesting</td>
<td>- (for GLOBE Harvesting)</td>
</tr>
<tr>
<td>22.</td>
<td>Permission to Federated Search</td>
<td>- (for GLOBE Federated search)</td>
</tr>
</tbody>
</table>
A series of short video materials

On “International Volunteer Studies”

Number of titles: around 1350

Typical duration: 1-3 minutes

Video format: two MPEG-4 format (720x480, 600x440) and two WMV formats (600x440 and 300x220).

One of the MPEG-4 formats keeps the quality for broadcasting.
Learning object–oriented Video Materials: Opening Title

Series title: International Volunteer Education Video Material Series
Title: Thai Elephant Hospital 2004: Treatment 1
Learning object-oriented Video Materials: Opening

著作：川崎辰彦（学習院大学・GONGOVAプロジェクト）、国際ボランティア教育プロジェクト（科学研究費補助金基盤研究A（研究代表者：放送大学ICT活用・遠隔教育センター、山田恒夫）による）、国際ボランティア学会

Copyright: Tatsuhiko Kawashiwa (Gakushuin University and GONGOVA project); International Volunteer Education Project (IVEP, at Center of ICT and Distance Education, the Open University of Japan, funded by Grants-in-Aid for Scientific Research (A) to Tsuneo Yamada) and The International Society of Volunteer Studies in Japan (ISVS);

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Creative Commons License (Attribution, Share Alike, Non-Commercial, Derivative Works)
Right description under Creative Commons (Element 19)

<table>
<thead>
<tr>
<th>License System</th>
<th>Value</th>
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<tbody>
<tr>
<td>Creative Commons Version 3.0</td>
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<td>Attribution- No Derivative Works</td>
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<td>Attribution-NonCommercial</td>
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<tr>
<td></td>
<td>- ShareAlike</td>
</tr>
<tr>
<td></td>
<td>Attribution-ShareAlike</td>
</tr>
</tbody>
</table>
Learning object-oriented Video Materials: Video
JOCW-Search: Search Results

http://keyaki.code.ouj.ac.jp/mt/lorsearch.cgi?app=jocw&limit=&q=Japanese%E3%80%80language&btn=%E6%A4%9C%E7%B4%A2&ti=&u=&lc=

JOCWコンテンツ横断検索システム

Japanese language の検索結果 6件中 1 - 6件目

<table>
<thead>
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<td>Mastering the grammar of a particular language does not guarantee a successful communication with a native speaker of that language. This is because language does not only function as a conveyance of information, but also has other functions such as expressing the language user's attitude/emotions. The objective of this course is to encourage a more profound understanding of the functions of language that exist beyond referential meaning, with particular attention given to markers and their uses in Japanese. An understanding of this aspect of language, and the function of particular markers, will lead to a deeper understanding of communication in Japanese in general. This course comprises three main parts: (i) general review of the non-touching marker system, (ii) elaborately reviewing markers such as ummae, ma, na, na, etc., and (iii) mainly reviewing markers such as no, yo, ja, no, doo, etc.</td>
</tr>
</tbody>
</table>

http://ocw.dmc.keio.jp

慶應義塾大学

CC BY-NC-SA

<table>
<thead>
<tr>
<th>日本語の話し方と言外の意味 (2007春秋学期)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastering the grammar of a particular language does not guarantee a successful communication with a</td>
</tr>
</tbody>
</table>


CC License
Reuse of video materials for a TV lecture program
CONTENT DELIVERY PLATFORM: TWO BASIC MODELS
Current Development at OUJ

OUJ course materials
1\textsuperscript{st} yr: (Printed) textbook [TEXT]
2\textsuperscript{nd} yr: Broadcasting program Lectures [A/V]
\hspace{0.5cm} Supplementary materials [other]
\hspace{0.5cm} using Internet and/or packaged media
3\textsuperscript{rd} yr: Open the course

Academic content:
\hspace{0.5cm} Directed by Principal Lecturer(s)
Production:
\hspace{0.5cm} In-house broadcasting studios and production dept
\hspace{0.5cm} Independent in each medium
\hspace{0.5cm} No senior producer responsible for all the
\hspace{0.5cm} production processes
\hspace{0.5cm} Sometimes out-sourcing
Toward New Development

Digital resources
Audio/Video Lectures
Textbook
Other materials
Supplements

Audio/Video Materials Recording
Digital Materials Production
Materials Repository
Institutional Repository
Editing
Authoring Packaging
Broadcasting Program
Cross-media e-textbook
Digital Courseware
## Content Delivery Platforms

<table>
<thead>
<tr>
<th>Cross-media Digital Textbook</th>
<th>Traditional LMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiar concept even to advanced age learners (Like Book)</td>
<td>Need Computer literacy education</td>
</tr>
<tr>
<td>Less interactiveness; SNS MAY complement the function</td>
<td>Interactive functions equipped</td>
</tr>
<tr>
<td>Weak course management functions; SNS MAY complement the function</td>
<td>Full course management system</td>
</tr>
<tr>
<td>Production process more similar to the current OUJ’s system Mild restructuring possible</td>
<td>More drastic restructuring is necessary in production system</td>
</tr>
<tr>
<td>Delivery using E-publishing framework</td>
<td></td>
</tr>
<tr>
<td>E-pub 3.0, ibook,….</td>
<td>SCORM</td>
</tr>
</tbody>
</table>
QUALITY ASSURANCE PROCESS:
COLLABORATION WITH CONTENT-RELATED ACADEMIC SOCIETY
The roles of academia in Quality control

<table>
<thead>
<tr>
<th>Standard or Core Curriculum (not complete)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study on curriculum</td>
</tr>
<tr>
<td>Agreement in community</td>
</tr>
<tr>
<td>Course Design</td>
</tr>
<tr>
<td>Supervision</td>
</tr>
<tr>
<td>Collection of materials</td>
</tr>
<tr>
<td>Production and Implementation</td>
</tr>
<tr>
<td>Peer-review / Evaluation</td>
</tr>
<tr>
<td>Practice/Sharing pedagogical experiences</td>
</tr>
</tbody>
</table>
A purpose of content sharing and reuse is to prepare for QUALITY personalized / customized learning under the limitation of financial and human resources.
Prospects

- **Integrated framework for sharing and distributing both open and proprietary learning content in various granularity (from materials to course)**
- Demographic diversity and pedagogical innovation drive “localization” and “personalization”
- Optimized to learner’s technical environment
- Quality assurance under the collaborations with academic and learners community through SNS

**OUJ ‘s challenges**
- “Material” repository of “OPEN” smaller-granular and quality-assured content
- Global federation of institutional repositories
- Cross-media delivery of multimedia course materials consisted of open and proprietary content
- Collaborations with various communities through SNS
- Facilitate the vision sharing between academia and corporates
26th Annual Conference of Asian Association of Open Universities (AAOU)

Date: 16-18 October 2012
Venue: Makuhari Messe, Chiba, Japan

Main theme:
Expanding the Frontiers of Knowledge through Open and Distance Learning in Changing Societies

Sub-themes:
1. New trends of ODL studies and practices
2. Organizational management and institutional leadership
3. Technology-enhanced teaching and learning
4. Innovation in curriculum development and pedagogy
5. Student support and learning communities
6. Quality assurance
7. Open educational resources (OER) and ODL
8. Crisis and risk management
Keynote Speakers
Dr. Arne Carlsen
UNESCO Institute for Lifelong Learning, Germany
Prof. Asha Kanwar
Commonwealth of Learning, Canada

Plenary Speakers
Prof. Terry Anderson
Athabasca University, Canada
Ms. Kumiko Bando
Ministry of Education, Culture, Sports, Science and Technology, MEXT
Prof. Tian Belawati
Universitas Terbuka, Indonesia
Prof. Gajaraj Dhanarajan
Wawasan Open University, Malaysia

Deadline for Abstract Submission: 15 June, 2012
Thank you very much!!

Contact Information

tsyamada@ouj.ac.jp