Expanding Market to Include Recurrent Education: A Case of Data Science Lecture Series

Makiko Miwa
The Open University of Japan

miwamaki@ouj.ac.jp

Outline
- Introduction
- Background
  - Recurrent Education
- Conventional Model of OUJ Classes
  - Broadcasting Classes
  - Online Classes
  - Face-to-face Classes
- Developing a New Model for Recurrent ED
  - Planning
  - Organizing Lecture Series
  - Formative Evaluation
  - Development of TV Programs
- Conclusion
  - miwamaki@ouj.ac.jp

Introduction
Knowledge Society
- skills acquired in formal ED should obsolete rapidly
- demand workers with innovative knowledge and skills
  ➞ People need to continue learning in order to keep up with the newly demanded knowledge and skills
- Technology-driven areas (e.g., informatics) need for recurrent education is high
OUJ
- the sole higher ED in Japan for life-long learning
  ➞ natural to offer recurrent education

Age Distribution of OUJ Students (Fig.1)

Occupation of Undergraduate at OUJ (Fig.2)

Background: Recurrent Education

The concept of recurrent education ... that education opportunities should be spread out over the individual’s lifetime, as an alternative to the ever-lengthening period of continuing education for youth. (Kalie, & Bengsso, 1973, p.5)
  ➞ a comprehensive education strategy to accomplish a full scale of continuing education after compulsory education
  ➞ expands conventional education which concentrates in the early life stage of youth by dispersing in a form alternating with other activities such as labor and leisure
Higher ED Enrolment rate of OECD Countries (OECD, 2017)

Recurrent Education Program Expected of OUJ

Provision of practical programs by OUJ

1. Work closely with industry associations and academic societies to substantially expand practical courses.
   <Example>
   - Open new courses including “data science” and “cyber security” in corporation with Shiga University, University of Tsukuba and Institute for Statistical Mathematics from 2018.
   - Utilize the video-recording capacity to support the advancement of practical training projects of IAOs, AOs to develop courses related to qualifications and career advancements.

2. Provide accumulated past courses nationwide according to the diversity of learning needs of working adults.
   Broadcast popular programs by lecturers of prominent experts in each field on newly established BS231 channel from October 2018.

Recurrent Education Program Expected of OUJ

3. Corporate with other institutions in developing and distributing online lectures developed by them.
   - Utilize resources (shooting studio, director, Know-how, etc.) of OUJ and provide its video distribution platform, etc.

4. Visualize learning outcomes to wider society
   - Introduce learning certificate “expert-mini” in corporation with industry.
   - Can be utilized as a unit in a university as a small subject group.

5. Utilize 50 study centers
   - Implementation of sophisticated learning consultation, provision of seminars, and establishment of study groups.
   - Promotion of face-to-face lectures in collaboration with other organizations such as industry associations and academic societies.

Conventional Model of OUJ Classes

- Almost all courses are for credit.
- Students are expected to graduate with bachelor’s degree.
- Class are offered through
  - Broadcasting (TV & Radio)
  - Online (Moodle)
  - Face-to-Face (at 50 study centers)

Conventional Model of OUJ Classes

- The main distribution channel since 1978
- 273 classes for undergraduate in 2017
- OUJ students have access to broadcasting TV and Radio classes on the Web
- Each broadcasting class is distributed every semester for four to six years.
- Takes four years to develop a broadcasting class

New Recurrent Education Measures (MEXT, 2018)

- Promote systematic career education from early childhood to higher education, and encourage support for developing careers for both working adults and athletes including after retirement

- Working Adults & Athletes
  - Support learning of working adults for career upgrades/change.
    - Develop a practical educational program by industry-academia cooperation.
    - Reduce time cost (Enhance short/online courses)
    - Reduce monetary cost.
  - Develop a structure for unified support, considering athlete’s dual career and disseminate the support program by operating “sports career support consortium”

- Higher Education
  - Establish a system to help students engage in social and establishment of professional self-reliance inside and outside the curriculum in all universities and junior colleges (February 2016, revised the standards for setting universities and junior colleges, Enforced in April, 2011)
  - Example of best practices: Implement a guidance program for freshmen to recognize the advantage of having goals and purpose of learning at colleges and universities.

- Primary and Secondary Education
  - Promote experiential learning of entrepreneurial, work experience, and internship.
  - Systematically fostering skills and attitudes required for social and occupational independence according to the developmental stage throughout the school.
  - Example: Enhancement of career education in the new course of study guidelines, we stipulate enhancement of career education and organize the system through elementary and secondary high school.
  - Introduce “Career Passport” that students can describe and look back their own learning activities and implement survey research on how to use it.

OUJ
Conventional Model of OUJ Classes

Online Classes

- Started offering online classes in 2015.
- Five undergraduate
- Seven graduate online classes in 2017.
- Plan to offer 48 online courses in 2019.
- Two year leading time for developing an online.

Conventional Model of OUJ Classes

Face-to-Face Classes

- 3000+ courses are offered at 50 learning centers nationwide
- A total of 3,276 subjects were taught (2017)
- Taught by fulltime OUJ faculty and regional lecturers
- People without OUJ student status can attend the face-to-face classes if there are vacancies.

Developing a New Model for Recurrent ED

Overview of the Data Science Lecture Series (Table2)

<table>
<thead>
<tr>
<th>Date</th>
<th>Venue</th>
<th>Topic</th>
<th>Lecturer</th>
<th>Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar. 10, 2018</td>
<td>Aichi Study Center</td>
<td>Data Sciences Foreword</td>
<td>Shizue Izumi (Dr. Shiga University)</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Make the best use of data science</td>
<td>Dr. Hidetoshi Matsui (Shiga University)</td>
<td></td>
</tr>
<tr>
<td>Mar. 23, 2018</td>
<td>Bunkyo Study Center</td>
<td>Artificial intelligence and data science in management</td>
<td>Dr. Setsuya Kurashahi (University of Tsukuba)</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marketing and data science</td>
<td>Dr. Toshikio Satoh (University of Tsukuba)</td>
<td></td>
</tr>
<tr>
<td>June 28, 2018</td>
<td>Bunkyo Study Center</td>
<td>Contemporary role of statistics and data science</td>
<td>Dr. Junji Nakano (the Institute of Statistical Mathematics)</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protection of Privacy in data science</td>
<td>Dr. Kazuhiro Minami (the Institute of Statistical Mathematics)</td>
<td></td>
</tr>
</tbody>
</table>

Formative Evaluation

- Requested lecture audience to fill a questionnaire survey for a formative evaluation.
- The questionnaire asked level of satisfaction, difficulty, source of information on the lecture series, preferred day & time, and demographic information of age, occupation, and student status at OUJ.
- 177 audience submitted the questionnaire.

Survey of Audience: Satisfaction?

- Did you satisfied with the lecture? (Choice)
  a majority were satisfied (4・5)

<table>
<thead>
<tr>
<th>Lecture 1&amp;2 (N=63)</th>
<th>Satisfied</th>
<th>Unsatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 (28%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td></td>
<td>4 (43%)</td>
<td>2 (32%)</td>
</tr>
<tr>
<td></td>
<td>3 (25%)</td>
<td>1 (14%)</td>
</tr>
<tr>
<td></td>
<td>2 (7%)</td>
<td>4 (28%)</td>
</tr>
<tr>
<td></td>
<td>1 (4%)</td>
<td>3 (14%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lecture 3&amp;4 (N=63)</th>
<th>Satisfied</th>
<th>Unsatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 (24%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td></td>
<td>4 (38%)</td>
<td>2 (32%)</td>
</tr>
<tr>
<td></td>
<td>3 (23%)</td>
<td>1 (4%)</td>
</tr>
<tr>
<td></td>
<td>2 (8%)</td>
<td>4 (38%)</td>
</tr>
<tr>
<td></td>
<td>1 (4%)</td>
<td>3 (12%)</td>
</tr>
</tbody>
</table>
Survey of Audience: Difficulty

Whether the lecture were difficult? (Choice)
A majority rated as appropriate

Survey of Audience: Source of Information

How did you find information on the lecture series?

Special Program: Data Science Revolution

May 5 (Sat.)
- 10:30 Data Science Revolution 1: Data Sciences Foreword
- 11:15 Data Science Revolution 2: Make the best use of data science
- 18:15 Data Science Revolution 3: Artificial intelligence and data science in management
- 19:00 Data Science Revolution 4: Marketing and data science

Reputation on the Twitter
- It seems that the broadcast nuclear framework of data science will be available at the OUJ in the second semester of next year.
- The data science revolution has flowed from the OUJ today! I want you to have fun reruns!
- The two lectures of the “data science revolution” that just finished were very interesting. Please rebroadcast them.
- Will the special program “Data Science Revolution” be seen on the net?

Conclusion

- OUJ has been expected to offer recurrent education programs for working adults on data science and cyber security.
- We developed a new model of developing a TV class in short leading time. We applied the new model in developing a class for data science.
- The formative evaluation of the lecture meetings by audience was positive.
- Reputation of the TV program on the web is very good.
- The leading time to develop a class is shorten from three years to half a year.
- Creation of classes for recurrent education based on the new model is expected to succeed.

References

Questions?