

From Competency List to Curriculum Implementation: An experience of Japan's first online master program for e-Learning specialists

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ABSTRACT

This talk describes the beginning of Japan's first online program to provide training at master level to become e-Learning specialists for workplace and higher education sector, at Kumamoto University, Japan. Concepts of instructional design have been applied to the program that claims to have instructional design emphasis in its contents.

Keywords: Instructional Design, Competency, Higher Education, e-Learning Specialist

INTRODUCTION

As the Japan's first 100% online program for e-Learning specialists in corporate and higher education, Master of Science program in Instructional Systems started in April 2006 at Kumamoto University. As the first attempt to add a 100% online program to the on-campus university of more than 100 years of its history, it is to train e-Learning professionals emphasizing four areas of expertise. The four I's, representing our program's emphasis, are the followings: Instructional Design, Information Technology, Instructional Management, and Intellectual Property.

It is a regular master program that requires two years of study, taking a minimum of 30 credit hours. Figure 1 lists courses of the program clustered into the four I's. Each course runs for 15 weeks, for two credits. Twelve courses are required to complete a Master's program, whereas 16 elective courses are offered from which four or more courses be taken as a part of the Master's program.



Figure 1. GSIS course list clustered into four emphases

It was planned to be a 100% online course for some reasons: (1) The program is targeted for working professionals who require flexibility for them to enroll while working full-time. (2) Kumamoto University is located in a southernmost island, whereas the demands for such a program are in major cities such as Tokyo or Osaka, not in Kumamoto. For an institute located far from major cities, online was the only chance to get enough students. (3) Japanese government regulation had been changed to allow 100% online graduate program, not as a correspondence program, but as a regular program that is equivalent of on-campus program through the advanced uses of technology to make interactions possible on a regular basis. (4) e-Learning professionals should be able to be trained via using an e-Learning system to show them how each of the e-Learning components can be used to its maximum potential.

The program (Graduate School of Instructional Systems, or GSIS) was launched in April of 2006 with 15 first year master's students, after being selected through rigorous admission process from 37 candidates. All of them are working professionals in their 30-40's, working full-time in various locations: 10 living in Tokyo, 2 in Osaka, and the rest in Kyushu Island where Kumamoto University is located.

A quick audience analysis revealed that they are mature students, to be studying alone at home or offices, but capable of conducting independent study via Internet. Minimal faculty support would be required, and encouraging collaboration and learning from each other would be an effective instructional strategy, since they have diverse backgrounds to share among themselves. Time management may be an issue, since they are working full time: Asynchronous mode of learning seemed to be the most flexible learning environment for the busy professionals.

The rest of this paper will describe our effort in applying concepts of instructional design (ID) when we created the GSIS program. It was our hope to be successful in applying ID concepts so that we can be one of the examples of good implementation of ID, since we are to teach how to apply ID in e-Learning as one of our program's main emphasis.

OVERALL DESIGN OF GSIS PROGRAM

Figure 2 describes the overall design of GSIS program created based on ID methodologies. Inputs are listed on the top of Figure 2, which included the 4 I's concept, list of courses (see Fig. 1), and governmental requirements for implementation to be regarded as equivalent of on-campus program (15 interactive synchronous/asynchronous sessions). Case studies, indicated on the bottom of Figure 2, were conducted to locate and examine advanced online programs, including instructional systems program of Florida State University, Open University of U.K., and Carnegie Mellon University's West Campus. Also taken into consideration was a movement of Japan's e-Learning Consortium to establish e-Learning Professional Certificate Program (eLP). An early draft version of eLP's competencies for seven kinds of professionals were obtained so our program could be aligned with what Japan's prominent professional alliance in the field of e-Learning had to offer to certify their professions.

Based on these inputs and consideration of future trends for our prospective graduates, a list of GSIS competencies was created and made public in January 2006. Course design policy was agreed among core members of the program, on which each of the course syllabi was drafted and coordinated through the workshop among the core members. A learning portal was then designed and created to link the University's single sign-on user identification to the learning management system (LMS, in particular, WebCT CE6), as well as to provide learning assistance for GSIS students. Each of the course contents was then created based on the course design policy, before the implementation of GSIS program. Each of the outputs is to be described in the following sections.

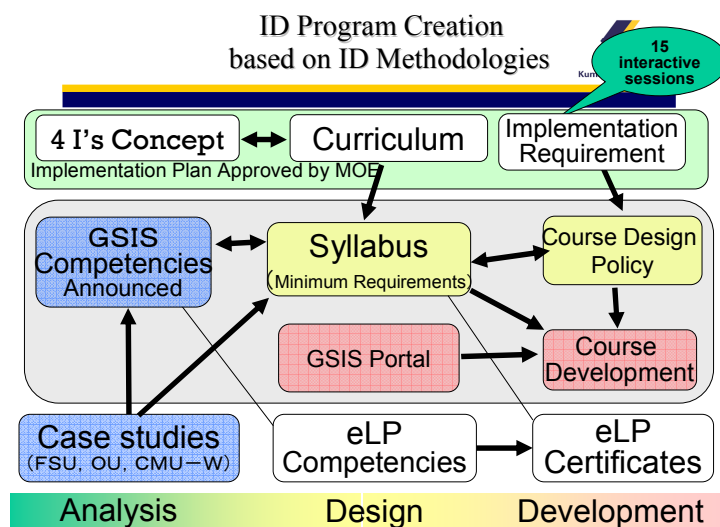


Figure 2. Overall design of GSIS program

GSIS COMPETENCIES

Table 1 shows GSIS core competencies, whereas Table 2 shows GSIS optional competencies. The GSIS core competencies list 12 capabilities that would be developed through taking required courses of the program. They cover the basic capabilities in the field of ID, IT, IP and IM, the four I's emphasized in the GSIS program. All the assignments in the required courses are mapped with one of the 12 competencies, which represent basic knowledge and skills of e-Learning professionals. When each of the assignments is accomplished by a student, a mark indicating the assignment will reverse the color, showing accumulating status of a competency by completing the assignment (See, Figure 3).

Likewise, the GSIS optional competencies cover the capabilities associated with 16 elective courses in the program. Below Figure 3, there is a list of optional competencies matched with assignments from elective courses. By showing in the form of competencies, the students, current and prospective, will be notified with our expectations for the students. It shows the boundaries of our expectations: for example, for IT related competencies, all the graduates are expected to become able to design effective, efficient, and appealing learning contents by utilizing functions provided by an LMS (Core Competency 4), and to develop a prototype of active contents executable on a Web browser (Core Competency 5). However, to become able to develop a prototype of active course contents by utilizing server-side applications, one need to take one or more elective courses (Optional Competency 1).

It was our thought that all of our graduates should have an experience of actually develop a course segment, so they will have acquired an ability to talk to programmers of e-Learning contents, although not many of our graduates would actually engage in the development of contents as programmers. The term "prototype" is thus used in the statement of the competencies, representing the minimum requirement for the skill related to development.

Table 1. GSIS core competencies

By completing this program, you will acquire a basic level of the following competencies:

1. To analyze the status quo of education and training practices, by referring to the fundamentals of instructional systems research.
2. To describe and interpret e-Learning success and failure cases in various domains and areas.
3. To create a course development plan and conduct a persuasive proposal based on various viewpoints of stakeholders.
4. To design effective, efficient, and appealing learning contents by utilizing functions provided by an LMS.
5. To develop a prototype of active contents executable on a Web browser.
6. To implement a course development project as a team leader.
7. To evaluate and suggest improvements for an implemented project or a developed course.
8. To propose strategies for educational services and businesses based on HRD strategies or market needs.
9. To recognize and solve legal and ethical issues in networked environment.
10. To watch latest advancements in instructional systems field and apply them in professional activities.
11. To disseminate findings from own practices through professional activities thus contribute to society.
12. To contribute to improvements and advancements of the GSIS program as an alumnus.

Note: Announced in Jan. 2006 at <http://www.gsis.kumamoto-u.ac.jp/outline/>

Table 2. GSIS optional competencies

By taking optional courses in this program, you will acquire a basic level of the following competencies:

1. To set up, manage and utilize a server for e-Learning and to develop a prototype of active course contents by utilizing server-side applications.
2. To develop courses and manage systems that meet requirements of e-Learning standardization and inter-operatability.
3. To create a safe e-Learning environment in terms of network security.
4. To propose management resolutions from the viewpoints of knowledge, information, and learning.
5. To discuss with subject matter expert in a specific area based on its own instructional characteristics.
6. To propose and support implementation of educational services and products as a consultant.
7. To propose establishment, improvement, and change in e-Learning policies for own organization and customers.

Note: Announced in Jan. 2006 at <http://www.gsis.kumamoto-u.ac.jp/outline/>

◆ コア ◆ 必修科目の単位を取得することで身につくコンピテンシー		科目内の学習課題							
1.	教育・研修の現状を分析し、教授システム学の基礎的知見に照らし合わせて課題を抽出できる。	e-理論	ID-I	基礎的	基礎的	基礎的	情報的	教育的	行動的
2.	さまざまな分野・領域におけるさまざまな形のeラーニング成功事例や失敗事例を紹介・解説できる。	e-理論	ID-II	教育的	基礎的	教育的	教育的	教育的	行動的
3.	コース開発計画書を作成し、ステークホルダごとの着眼点に即した裁得力ある提案を行うことができる。	ID-I	ID-II	教育的	教育的	教育的	教育的	教育的	行動的
4.	LMSなどの機能を活かして効果・効率・能力を兼ね備えた学習コンテンツが設計できる。	ID-I	学習的	教育的	教育的	教育的	教育的	教育的	行動的
5.	Webブラウザ上で実行可能なプログラミング言語による動的な教材のプロトタイプが開発できる。	学習的	基礎的	教育的	教育的	教育的	教育的	教育的	行動的
6.	開発チームのリーダーとして、コース開発プロジェクトを遂行できる。	教育的	教育的	教育的	教育的	教育的	教育的	教育的	行動的
7.	実施したプロジェクトや開発したコースを評価し、改善のための知見をまとめることができる。	ID-I	ID-II	教育的	教育的	教育的	教育的	教育的	行動的
8.	人事戦略やマーケットニーズに基づいて教育サービス・教育ビジネスの戦略を提案できる。	教育的	教育的	教育的	教育的	教育的	教育的	教育的	行動的
9.	ネットワーク利用に関わる法的・倫理的な問題を認識し、解決できる。	知的的	知的的	教育的	教育的	教育的	教育的	教育的	行動的
10.	教授システム学の最新動向を把握し、専門家としての業務に応用できる。	基礎的	研究的	教育的	教育的	教育的	教育的	教育的	行動的
11.	実践から得られた成果を学会や業界団体等に発表し、社会に貢献できる。	研究的	研究的	教育的	教育的	教育的	教育的	教育的	行動的
12.	教授システム学専攻の同窓生として、専門性を生かして専攻の発展・向上に寄与できる。	基礎的	研究的	教育的	教育的	教育的	教育的	教育的	行動的

Figure 3. GSIS portal showing Core Competencies and Assignments

GSIS COURSE DESIGN POLICY

Based on our audience analysis, governmental regulations, and general grading policy of the University, a set of course design policy was established as shown in Table 3. Asynchronous mode was introduced as the main method of interaction though the use of WebCT's quiz function, report submission function, and Bulletin Board System (BBS). Instead of having deadlines once a week, our policy states the 15 required interactions to be clustered to have two or more tasks due on the same date (Policy 4). This was introduced by taking account the fact that each of the students would be taking about 5 courses each semester. If due dates are set for every weeks, then he or she would need to handle tasks for the week for five different courses each week. By having clusters, a student would be allowed to finish several tasks in one course, before moving to a different course's tasks.

For encouraging interactions among our students, Policy 6 was introduced (Table 3). By using BBS's functionality for threaded discussions, a student would be asked to post a message with his/her draft proposal as an attachment. Other students, after posting their own drafts, are encouraged to review the classmates' drafts, then make any comments as a reply to the original message. It is after these interactions among the students, their final proposal would be turned in by using WebCT's report submission function. Points are to be allocated to the contributions of making comments to other's drafts, indicating that the interactions among peers are of highly value.

Table 3. GSIS course design policy

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1. Fifteen (15) interactive sessions in each course with evidences, e.g., quiz, mini-report, answer to practice exercises.
 2. Course grades based on multiple reports/products with the record from 15 sessions, each requiring the minimum of 60% for a passing grade.
 3. Direct connection of course assignments to the GSIS competencies.
 4. Due dates of 15 session tasks to be clustered into 3-5 blocks to enable learner's intensive study.
 5. Limited synchronous whole class activities (maximum of twice a semester per course).
 6. Students commenting each other's reports/products for improvements before final submissions.
 7. Introductory video message in all courses or all blocks of a course as a motivator, not as a primary mode of information provision.
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GSIS LEARNING PORTAL

GSIS Learning Portal was designed and developed as our original products serving for the need of our prospective students. It was designed to connect the University's sign-on site to our LMS (WebCT), in such a way that the portal would serve for time management of our students, as well as a portal to various resources including University's digital library and registration.

Figure 4 shows a screen that provides monitoring function for all the courses a student is currently taking. In particular, this student was taking five courses, after finishing an orientation shown on the bottom. Each course has direct links to 15 tasks in the upper portion, and several assignments in the lower portion of a horizontal scale. By moving mouse over to each of the buttons, due date and starting conditions are indicated as a mouse pop-up. Each entry is marked its due date by colors: overdue in red, due in a week in pink, being accepted in yellow, available in green, and not yet available in gray. Evaluation status is also shown as either passed (yellow), resubmission required (orange), or grading in progress (blue). It is our wish that by providing such an overview for each of the students, he or she would have a better control in managing time for study.

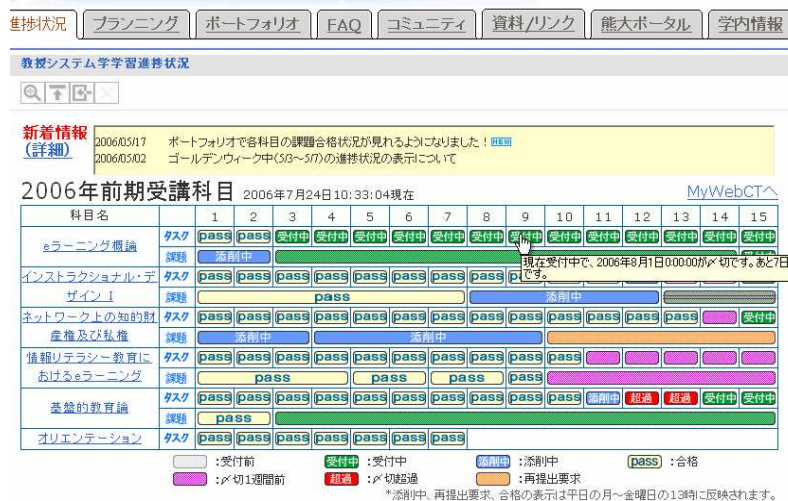


Figure 4. Monitoring Progress in All Courses (GSIS portal)

CONCLUSION

This paper described initial design process and outputs to be used for GSIS at Kumamoto University. It was our intention to utilize what we know about instructional design to create our own learning environment for 100% online master course for working professions. The first year has passed and we are collecting data from both students and faculty members to examine how successful we have been so far, and to start improving our portal, course contents, to better meet the needs of our own students.