

Instructional Design Workshop based on Needs Analysis at the University of South Pacific

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Abstract: Instructional design workshop was conducted for staffs at Distance and Flexible learning support center of The University of the South Pacific. Interviews were conducted to analyze the current situation of production staffing and processes, to clarify the needs for such a workshop. SWOT analysis from the interviews set up the structure and contents of the workshop. The ID workshop was then conducted for 5 days dealing with motivational design, instructional design strategies, multimedia characteristics, production procedures, and collaboration with subject matter experts. Groupwork format was adopted so as for the participants to acquired applicable skills and knowledge, while communicating with each other. The results of ID workshop and a follow-up survey verified the effectiveness of the workshop. Key factors are discussed as to how to conduct workshop based on needs analysis.

Introduction

The University of the South Pacific (USP) is a representative university in the Pacific Region, and an international center of excellence for teaching and research on all aspects of Pacific culture and environment. USP has 3 campuses in Samoa, Vanuatu, and Fiji. Study programs at USP have a wide variety, including teaching, tourism, journalism, agriculture, science and environmental management, technology, computing and information systems, banking and finance, public administration and management, counseling and social services and many more.

Distance and flexible learning (DFL) allows students to take courses and pursue USP programs of study from locations far away from USP's three campuses. Approximately a half of the university's 15,000 students choose to study by DFL. Begun in 1970, DFL programs are now offered for independent study through print materials, Video broadcasting, and e-learning. Because of the current network bandwidth limitation, DFL is force to use print materials as main mode of communication. However, DFL has found their ways to utilize their own satellite-based video broadcasting system to deliver courses, as well as video and audio tutoring for

distance students. Recently, with an assistance of Japan's Official Development Aids, DFL Support Center (DFLSC) launched e-learning component, to be added to their DFL courses using WebCT as their platform. A first trial course was offered to 200 students in 2003, and students' evaluation data were being collected, when a short-term expert and an assistant were dispatched from Japan. The purposes of their visit were: (1) to investigate current situations of DFL, and (2) to conduct a skill-building Instructional Design (ID) workshop at DFLSC of USP. This paper describes the current status of DFLSC of USP and the design, implementation, and outcomes of the ID workshop, conducted by the Japanese experts. The follow-up survey was conducted with an assistance of the second author, which revealed effectiveness of the workshop.

Need Analysis Survey of USP-DFLSC

Authors (1st and 3rd) visited USP Laucala Campus, Fiji for 14 days from 19th October, 2004 and spent first four days conducting a need analysis. In the DFLCS, there is Distance Education Unit (DEU) which is in charge of design and development of DFL course materials. DEU is the main department for providing materials such as course guide book, textbooks, videos and e-learning (WebCT). DEU staffs are designing and developing contents based on information provided by course writers. Interviews of DEU staffs were conducted so as to break down staffs' job tasks and assignments. Table 1 shows list of interviewees and their job titles, with main contents of the interviews. Table 2 summarizes job descriptions of DEU staffs, which were identified during the interviews.

	Job Title	Contents of interview
1	Acting Co-ordinator of Instructional Design and Development (CIDD)	Job description, back ground, current concern, request for ID workshop, cycle of materials(text book), relationship to CELT(Centre for the Enhancement of Learning and Teaching)
2	Instructional Designer (ID) of Video Broadcasting Course	Job description, current concern, request for ID workshop, video broadcasting course details
3	Instructional Designer (ID) of Online Instructional Designer	Job description, back ground, Evaluation system of DFL, Course fee, in charge of course, role of editor, format of documentation, role of Instructional Designer, staff number, reaction of student to multimedia, Web-CT, media choice for student, course development procedure, course commence time,
4	Text Processor	Job description, Flow of job description, overall DFL subjects, DFL subject materials, Development and revise cycle, relationship between course writer and DEU, Job assignment in team, process of course development decision, course evaluation by students
5	Course Writer	Job description, Relationship between Instructional Designer

Table 1. List of interviewees and main interview contents

Job title	Job Descriptions	Number
CIDD (Co-ordinator IDD)	<ul style="list-style-type: none"> • Project Management (Delivery time) • Allocation the team to develop or revise course materials 	1
ID (Instructional Designer)	<ul style="list-style-type: none"> • Leader of each team • Matching contents and design with Course writer (Subject Matter expert-lecture) • Managing the team member's work 	6
CDA (Course Development Assistant)	<ul style="list-style-type: none"> • Managing minor adjustment and unrevised materials • Follow-up of EP (Electronic Publisher) 	6 (4 official staff, an 2 contract employee)
EP (Electronic Publisher)	<ul style="list-style-type: none"> • Training of text processor • Adjustment with other sections (including graphic designer) • WebCT website development (Shell) • Registration • Help desk 	6

Table 2. DEU staffs and job descriptions

Through the survey of DEU at DFL, it became clear the design and development processes and methods used by each team. There were six teams working independently with one instructional designer as leader. Each team designs and develops course materials following similar instructional design processes. The production progresses were reported to CIDD using a commonly designed form of progress report. However, other techniques, skills and know-hows were not shared among six design teams, due to the lack of knowledge sharing procedures or management systems. There was not initial training available for newly joined staff, so that each team would provide on-the-job training on their own ways. There was a strong need for knowledge sharing and standardization of design processes. Table 3 summarizes the result of the need analysis in the form of a SWOT (Strength-Weakness-Opportunity-Threat) analysis. Major findings from the interviews are listed in Table 4.

	Positive	Negative
Internal	Strength <ul style="list-style-type: none"> • Hierarchy of professional in material development • Quality of academic staffs • 30 years experience of Distance education and know-how • Support system from overseas • English (Common language) 	Weakness <ul style="list-style-type: none"> • Lack of common development forms • Lack of coalition among teams • Absence of Manager
External	Opportunity <ul style="list-style-type: none"> • Possibility of broadband era • expanse of market by the internet (outside of south pacific area) 	Threat <ul style="list-style-type: none"> • Slow speed of internet access speed • Appearance of competitor at internet market

Table 3. SWOT analysis of DEU

Item	Findings
General	There are many students who use DFL in 12 Member Countries of the Pacific region and other countries. DLF try to improve and enhance of DFL with corporation of Australia and JICA (Japan International Cooperation Agency). USP has provided Distance education since 1970's, now 4,202 (46%) out of 9,118 students are taking Distance education. USP has satellite Intranet which is called USPNet, but they have delay of internet access problem. Connected by telephone to the Internet causes a practical limitation of Internet utilization. DFL is attempting to offer maximum learning environment by using various leaning materials under current limited communicational environment.
Management (DFL)	Director position which is the organizer of DFL is now absence, and DEU director is also absence who is in charge of DFL course material development management. CIDD is so acting for both of the managerial functions, while also playing the role of one of six IDs. Selection process is undergoing for the managing positions, which are necessary for further effective activity. Especially DUE director, who is leader of Instructional Designers, is of high necessity.
Planning of courses	University committee decides the number of DFL course development each year, which consists of representatives form all colleges. One year (12 months) or a half year (6 months) is allocated to develop a new course. A course writer who teaches on-campus is assigned for each course to work with DFL instructional design team.
Number of DFL course	135 courses (first semester, 2004) — USP has plan to prepare all courses as DFL for all students irrespective of the mode of study by 2010. — DFL is developing 5 to 7 new courses per a semester, and planning to develop 12 to 15 courses in year 2005.
DFL course mode	1) Print-based : I&A (Introduction and Assignment) + Course textbook 2) Video broadcasting course : I&A + live lecture (24 courses available in 2004) *Some courses are video-recorded at local USP centers *They are preparing VOD system to be delivered at night to be stored at local centers 3) Multi-modal course : I&A + WebCT + live lecture (12 courses) *WebCT is used only for interactive part because of narrow band. (Discussion by BBS, quiz, Q&A, etc.) *Other course materials are delivered off-line (Print-based, or CD-ROM)
Specialties of staffs	DEU teams comprise a number of academic staffs acting as: 1) ID (Instructional Designer) 2) CDA (Course Development assistant) 3) EP (Electronic Publisher)
Teamwork	DEU has 6 instructional designers. Team is organized by an instructional designer. Each team proactively address with leader of each professional. Good Teamwork.
Development and Revision process (Print materials)	Course materials are classified into 4 types: 1) new (5 to 7 course a semester) -> used for 3 years 2) revised -> used for 1 year 3) minor adjustment -> used for 5 years (as unrevised course) 4) unrevised -> → renewal or revised 5 years after * I&A booklet is revised every semester including unrevised periods * I&A = syllabus, course information, assignment, additional reference when teacher has changed
Evaluation	Basically, same questionnaire with print materials are used for any materials, but some print specific items are revised to be more suitable for digital materials. Evaluation results are checked each by EDU team's person in charge. However, there is no process to review by all. Collection rate of last year's questionnaire was not high, less than quarter. In this semester, student evaluation data is being collected on-line for the first trial WebCT course (CS222), with an expected collection rate to be over 50%.
Cost	40F\$ (Include 2 course books and I&A) Quantity depends on the course.

Table 4. Results of interview

ID Workshop Design

Based on the need analysis interviews, ID workshop was designed to cover the following five aspects of instructional design: motivational design, instructional design strategies, characteristics of multimedia, production process design, and cooperation with course writers. Table 5 shows planned workshop schedule and contents. The framework of ID workshop was described on the first day of the workshop as in Figure 1.

<p><i>Workshop1 : Motivational Design (October 25, 2004)</i></p> <ul style="list-style-type: none"> ● Motivational obstacles which students face in Distance education program ● Lecture 1: Motivational design model : ARCS theory ● Groupwork 1: Solution ideas in materials provided by DFLSC
<p><i>Workshop2 : Instructional Strategies (October 26, 2004)</i></p> <ul style="list-style-type: none"> ● Benefit analysis of print materials as the main mode of distance education program ● Lecture 2: Instructional Design strategies: 9 Instructional Events and 5 star Instruction ● Groupwork 2: Improvement Proposal for print materials
<p><i>Workshop3 : Multimedia Analysis (October 27, 2004)</i></p> <ul style="list-style-type: none"> ● Comparison analysis of print materials and Multimedia materials(MM) ● Lecture 3: History of MM: From interactivity point of view ● Groupwork 3: Print materials in broad-band area: Should we keep using the print mode?
<p><i>Workshop4 : Production Process Design Analysis (October 28, 2004)</i></p> <ul style="list-style-type: none"> ● Current status analysis of production process at DFLSC ● Lecture 4: Systematic course development process model and checklist ● Groupwork 4: Minimum requirement criterion for each production phase
<p><i>Workshop5 : Train the Trainer Analysis (October 29, 2004)</i></p> <ul style="list-style-type: none"> ● Specification of required document and production process phase at DFLSC ● Lecture 5: Corporative work strategy with Subject Matter Experts(SME) ● Groupwork 5: Minimum quality checklist required in documentation forms

Table 5. Workshop schedule and contents (Tentative)

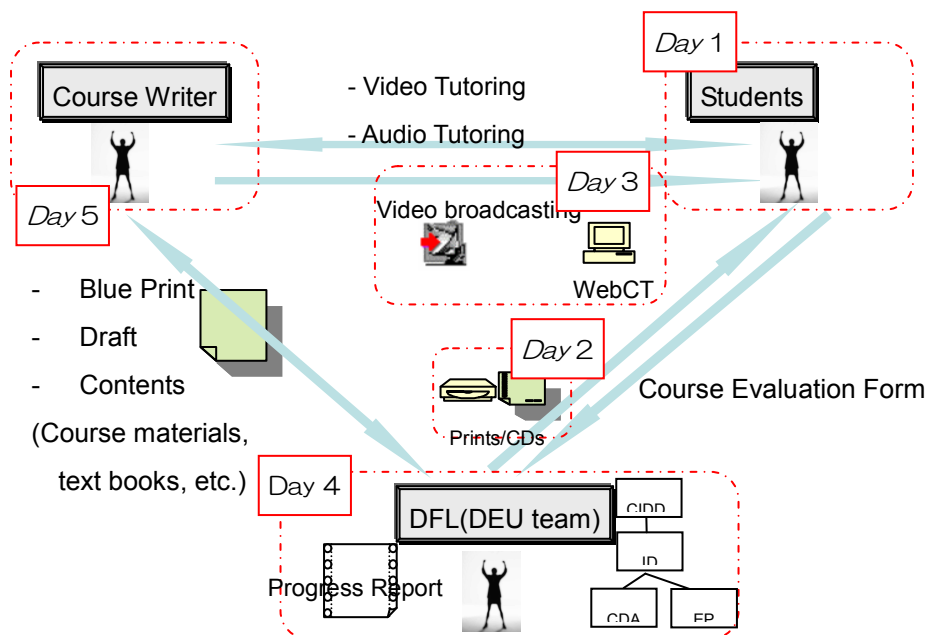


Figure 1. Framework of ID workshop

ID Workshop Implementation

The ID workshop was held for 4 hours each day for 5 days. The target participants were all of 20 DEU staffs. Almost all staffs were attended in the workshop, except for unavoidable tasks such as a meeting. Workshop completed with a success by producing daily outputs as shown in Table 6. Following the ID workshop, an open lecture was prepared and provided by the leaders of DEU, who completed the ID workshop, to interested audience (faculty and students), showing the results of the workshop, and future directions of DEU. The lecture was well received by the audience, which indicated successful output from the workshop.

Date		
Day1	Goal	Make DFL material more appealing by knowing ARCS motivational model
	Outputs	-Analysis of motivational obstacles DFL students are facing -A list of improvement ideas to enhance motivational situation
Day2	Goal	Make your DFL materials more effective: Instructional Strategies
	Outputs	-Benefit analysis of DFL materials: a list of good features -Clarification of DFL's sales points by Gagne's 9 Events of Instruction and Merrill's 5 Star Instruction
Day3	Goal	Find out what advantages multimedia brings to DFL. What are in common? What are the differences? Compare print with WebCT.
	Outputs	-Comparison of print materials and multimedia (commonality and differences) -An Action Plan for broadband area: which part should turn into WebCT, and which part should remain in Print Format, based on what policy?
Day4	Goal	Find out a set of Common Minimum Requirements for each development phase for DFL: Design checklists.
	Outputs	-A list of common minimum requirement and person in charge for each development phase
Day5	Goal	Be ready to talk with CW by spell out what documents we need for each development phase for DFL: Design checklists.
	Outputs	-A list of output from each phase of production: Blue Print, Prototype, Complete I&A, Complete Booklet, Complete Multimedia, and Evaluation checklist -A set of minimum requirements ideas for each output -Major steps toward completing the specification for each output

Table 6. The detail of workshop

A Follow-up Evaluation

The follow-up evaluation was conducted in January 2005, three months after the ID workshop. Retrospective reaction toward the ID workshop, retention of knowledge from lecture, behavioral changes, and alterations of workflow were to be confirmed in the follow-up survey. Seventeen (17) out of twenty workshop participants answered the follow-up survey, which consisted of seven Instructional Designers, five CDAs, and five EPs. Table 7 summarizes retrospective reactions toward the ID workshop, whereas Table 8 shows subjective evaluation of retention of knowledge from lecture and behavioral changes after the workshop. It was found that the ID workshop left positive impressions for the participants, and most of the items were well-remembered. On the other hand, not many of items were found out to be having been utilized in their work since then.

interesting	15	2	0	0	0	boring
tired	0	1	0	4	9	Not tired
sleepy	0	0	0	3	11	Not sleepy
satisfied	12	3	0	0	0	dissatisfied
useful	15	1	0	0	0	useless
clear objective	14	2	0	0	0	Ambiguous objective
easy	3	8	3	1	0	difficult
deep	9	4	1	1	0	shallow
effective	12	3	0	0	0	ineffective
valuable	12	3	1	0	0	worthless
active	6	6	1	1	0	passive
random	1	2	3	2	7	systematic
clear	9	5	0	1	0	vague
dull	0	0	1	6	6	clever
complex	1	2	3	4	3	simple
fundamental	7	4	1	0	0	frivolous
bad	0	0	0	2	12	good
relevant	15	0	0	0	0	irrelevant
slow	0	0	6	5	2	quick
necessary	14	1	0	0	0	unnecessary

Table 7. ID workshop impression degree for each pair of the adjectives

Contents of lecture*	(a) How much you remember (retention degree)				(b) How much you have used in your job since then (effectiveness)			
	Remember well (3)	Remember a little (2)	Not remember (1)	Average	Using frequently (3)	Using a little (2)	Not using at all (1)	Average
ARCS model	13	1	0	2.93	6	5	0	2.55
Gagne's Nine Events of instruction	7	7	0	2.50	3	7	1	2.18
ADDIE model	7	4	2	2.38	5	1	2	2.38
Merrill's First Principles of Instruction	4	8	1	2.23	0	7	2	1.78
Voyage of the Mimi and Palenque	5	5	3	2.15	0	2	6	1.25
Hypertext/hypermedia (Jonassen)	4	6	3	2.08	1	1	6	1.38
Flow of Multimedia in Education and Component Technology	5	4	4	2.08	3	3	5	1.82
Preparing instructional objectives (Mager)	5	4	4	2.08	1	2	6	1.44
Equivalence theory of distance education	3	4	3	2.00	1	3	2	1.83
Teaching Machine (Skinner)	2	8	3	1.92	0	3	8	1.27
Dick & Carey model	2	6	3	1.91	1	2	4	1.57
Total	171	114	26	2.21	63	72	42	1.77

Note: *rank ordered based on average score of retention degree

Table 8. Participants' retention degree and effectiveness of lecture in the ID workshop

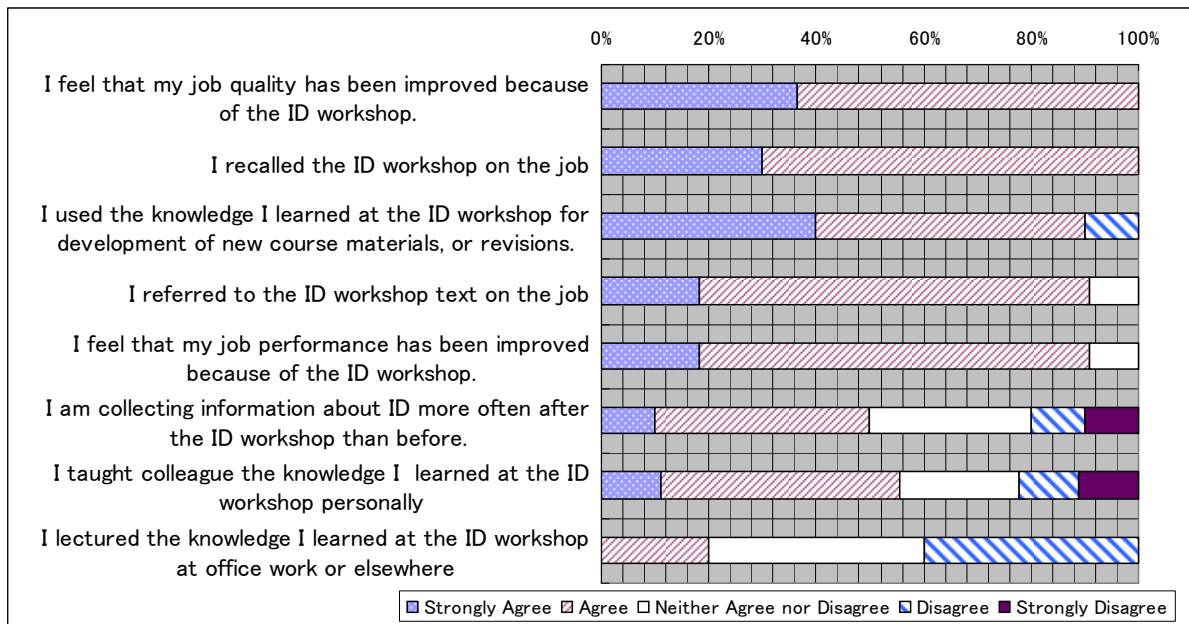


Figure 2. Behavior changes after the ID workshop

Behavioral changes of the ID workshop participants are shown in Figure 2. All of the respondents agreed/strongly agreed that the workshop improved their job quality, and recalled the workshop on the job. All but one have used the knowledge from the workshop in their jobs. Other items also revealed that the ID workshop had caused behavior changes, at least to some of the participants.

The follow-up survey revealed positive impacts to the participants, in terms of their impressions about how the workshop was conducted, what they have learned, and how they applied what they had learned in the workshop in their subsequent jobs. The positive impacts were also expressed by their comments. However, the effects of the workshop have been limited to individuals, without major changes in management structure of that organization. One Instructional designer commented as follows:

Very useful, but needs to be followed up much further. We only reached a preliminary level. We were all so excited that at least we got this far (so much further than we had in the past), but now looking at it, I feel sad that we've done nothing with it (for print courses) in four months.

One EP also commented on the lack of organizational initiative as follows:

The steps that we discussed should be put into practice or implemented.

It is our hope that conducting the follow-up survey itself would have a “wake-up effect” amongst the professionals, so that they would initiate systemic reforms based on the ID workshop at organizational levels. Continuous observations are needed to further clarify effects of the workshop at a longer range. Continuous supports are also needed to strengthen the effects of the workshop that we know from this study have already accomplished so far.