e-Portfolio Way: Life-Long Learning: e-Portfolio for Adult Education at KIT

Minoru NAKAZAWA[a*]
[a]*Dept. of Information and Computer Science, Kanazawa Institute of Technology , Japan*
*nakazawa@infor.kanazawa-it.ac.jp

Abstract: Education for the life-long learning must adjust to the rapidly changing social needs and must ensure timely life-long learning opportunities to adult learners. Kanazawa Institute of Technology (henceforth, KIT) initiated a new program based on an e-portfolio system to foster and support the life-long learning in the graduate program in 2004. This program was realized with the system called 'the KIT Portfolio Intelligence', which took care of the entire learning processes of individual students through the light of the Plan-Do-Check-Action cycle for the curriculum as its fundamental educational concept. The learning processes and achievements as well as the acquired knowledge and skills in courses were logged and archived in the e-Portfolio across the board. Furthermore, the graduation thesis was placed as the final artifact or evidence of the showcase in the e-Portfolio. Thus, by working with the e-Portfolio, each adult student set the goal of his/her own and planned the reflected objectives to accomplish the goal. The entire learning process was able to be monitored in the e-Portfolio. Thus, by working with the e-Portfolio, each adult student was able to step-by-step moving forward to his/her goal. This paper reports the experience as well as the effectiveness of the graduate program for adult learners that have been accumulated in the last several years.

Keywords: Adult Learner, Life-Long Learning, Learner-Centered Education, Portfolio Intelligence, Active Learning, Human Power Development, Career Development

Introduction

In KIT (Kanazawa Institute of Technology), we have been working on the reform and the operation of the educational program to clarify the quality for the upgrade of the adult education since 2004. Concretely, we have enabled adult student to accumulate the result of the lecture and extracurricular activities. In addition, a systematic mechanism that the improvement of mutual verification and the education of the learning process and the result could be attempted from student's viewpoint is progressed by the individual interview result with the adult student. We have been proposing the mechanism showing in the above-mentioned as "KIT portfolio intelligence". This mechanism has been the closely collaborations the adult student, the teacher, and the staff, and has based of the education at the improvement cycle (PDCA).

The KIT portfolio intelligence has been different from the education of the before done when the individual is evaluated by outcome of research and grade of subjects. It's a new educational technique for doing a quality evaluation in the lecture course corresponding to the educational target that KIT sets by valuing the process how to understand knowledge and the technology and what to master. Additionally, the education by the portfolio intelligence is an effective educational technique in the following points.

- Adult Student
  - Objective evaluation of integrated human power improvement

- Important factor for reconfirmation and recognition of content of study and knowledge

- Educational institution
  - Grasp of adult students study understanding level
  - Clarification of coverage to educational target as graduate program

In this paper, Section 2 describes competency model on demand in portfolio intelligence. Section 3 describes the portfolio intelligence file. Section 4 describes the action learning process.

1. Competency model on demand

Figure 1 shows the basic plan of HRD of this graduate program (Program in intellectual creation system).

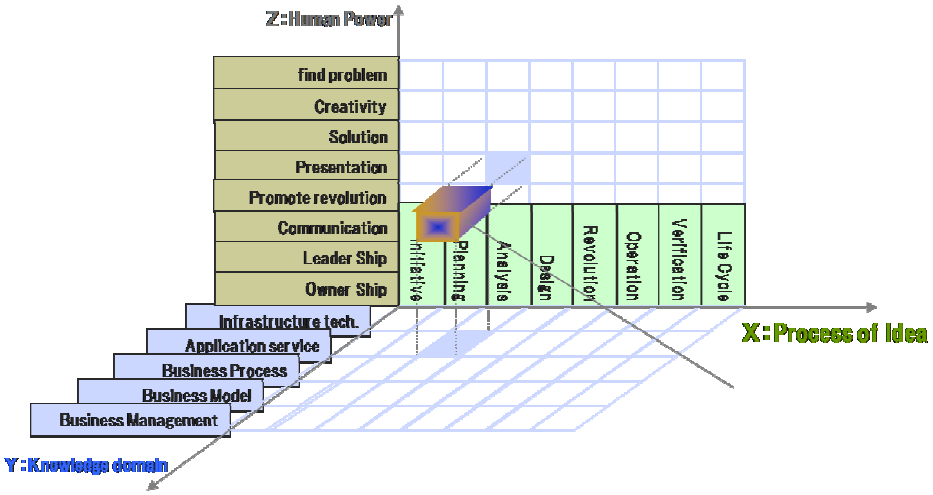

Figure 1. Competency model on demand

First of all, the adult student executes the self-evaluation for the present capability using EQ (Emotional Intelligence Quotient) examination. Next, the subset of the combination of the area competencies that they want to acquire in the graduate school is set from "Human power", "Knowledge domain", and "Process of idea". As a result, their targets are clarified, and the competency registration model construction has been achieved. Subsets shown in each axis of Figure 1 are not the one that exists individually, and have been integrated. An own strong point and weak point is understood by using the combination of subsets in the self-analysis, and it helps to the target setting of study.

2. Portfolio Intelligence File

In this section, we explain the composition of the portfolio intelligence file. The adult students attend a learning Master's seminar, research activities, and electives in the flow named MPDC at the Grow Up cycle (See Figure 2).

The adult students have made the summary that expresses the knowledge domain, the process of idea, and the human power. Moreover, power to be able to do the reflection by study has been valued because it has aimed to assume that it is possible to evolve at any time. For instance, the reflection in the wide range has been enabled as the practice of elective becomes the motivation of research activities. The summary has been created as a result at this Grow Up cycle, and the research paper also has made. About the portfolio

intelligence file, it has become the evidence of study in the postgraduate course at the same time though it has been adult student individual's artifact.

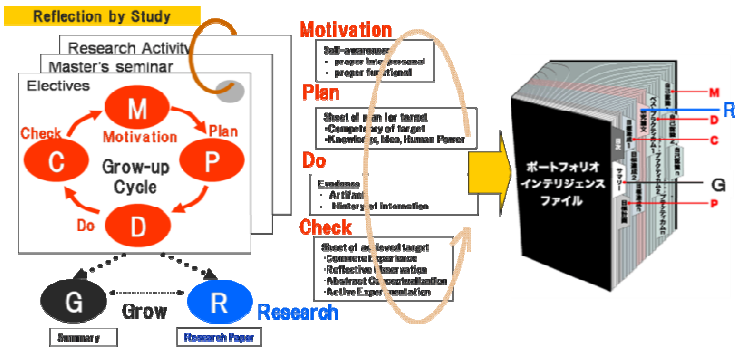

Figure 2. Portfolio Intelligence File

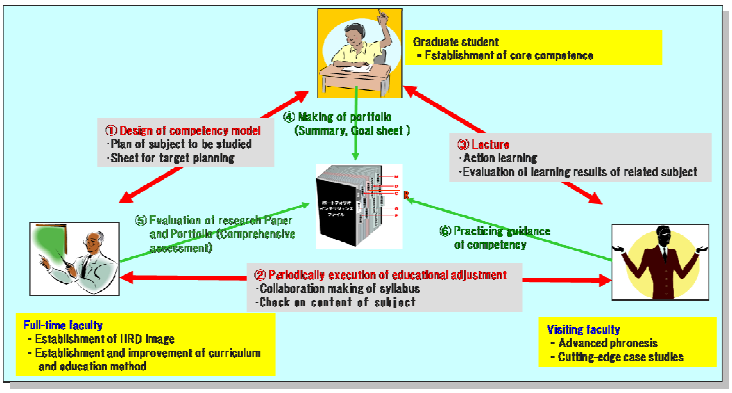

Figure 3. Relation between Portfolio and Learning

Figure 3 shows the study flow using the portfolio intelligence file mentioned above.

1. Design of competency model
   To develop the competency model, the registration planning and the target planning sheet are constructed through the interview among the adult student and full-time professors.
2. Periodically execution of educational adjustment
   Periodically execution of educational adjustment of the collaboration making of the syllabus and the check on the content of the subject is done among the full-time professors and the visiting professors.
3. Lecture
   The lecture that uses the action learning is executed, and the evaluation of learning results of the electives and required are performed among the adult student and the visiting professors.
3. Making of the portfolio intelligence file
   The summary and the accomplishment of a goal sheet that becomes material as a result of these subjects in the portfolio intelligence file have been made.
4. Evaluation of research paper and portfolio intelligence file
   The professor executes guidance and the evaluation of the summary and the accomplishment of a goal sheet at any time, and is tying to the comprehensive assessment of the research paper and the portfolio intelligence at the end.
5. Practical guidance of competency
   An academic, practicing guidance by the professor based on the case study is executed to the graduate student.

3. Action Learning Process

Figure 4 has explained the action learning process. In the lecture, the education of modularity has been taken. In addition, the information service to the adult student has been done by describing "Educational technique", "Material", and "Environment" clearly on the syllabus. The process of the experimental learning that refers to Kolb model is executed with the experience and the report in the lecture. We explain about the model of the process in this system.

1. CE (Concrete Experience)
   The competency model that the graduate student was able to acquire the content of the experience learning is described clearly, and those evidences are shown.
2. RO(Reflective Observation)
   The content of the experience learning (CE) has been considered and understood from other people's views, and it's described to have reconsidered again based on it.
3. AC(Abstract Conceptualization)
   The reconsideration result (RO) has been proven through an academic article and the research. An objective idea, the abstraction idea, and the generalized idea have been supported, and the grasp of essence has been tried.
4. AE(Active Experimentation)
   The plan applied to other problems is made based on the abstraction idea (AC).
   The report that describes the above-mentioned process becomes the sheet about achieved goal.

In addition, the material that becomes these evidences is stored in the portfolio intelligence file.

4. Evaluation

In order to evaluate how the system works effectively in our graduate program, we conducted a survey in the form of a questionnaire to our graduate students. There are thirty nine respondents to the questionnaire. The data is not enough to make statistical assessment, but we can see the student reactions to some extent. One of the results is shown in Fig. 5.

- To the question, "A prior explanation was enough", 15.4% of students answered "I think so". Positive response totaled 53.9%.
- About effectiveness of portfolio intelligence, the response, "I think so", totaled 30.8%. Including 38.5% of the response, "I think probably so", then 69.3% of adult students satisfied.

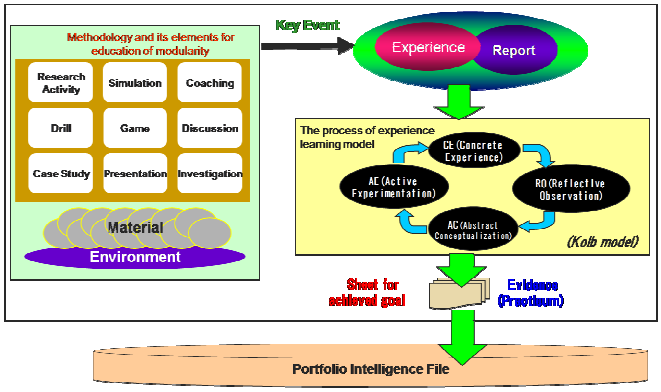

Figure 4 Action Learning Process

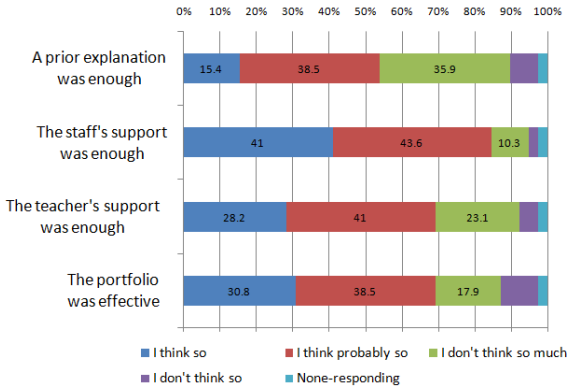

Figure 5 Evaluation of Portfolio Intelligence

There are some comments from the student as follows:

- Advantage:
  - The experience was easily arranged.
  - The purpose and the current state became clear.
  - Looking back easily during study.
- Disadvantage:
  - Need careful security consideration
  - Need to unify guidance methods among teachers and staffs

5. Conclusion

In this paper, we introduced an educational portfolio system (KIT Portfolio Intelligence) of course management developed by KIT for KIT graduate course in 2004. This mechanism has been successful under close collaboration among adult student, professor and staff, and has based on the graduate education at the improvement cycle. In addition, it has been able to get objective evaluation with the point of making of the education substance. At present, we made the prototype as IT system, and started a test run since April.2008. In future work, we will consider to cooperate with other universities and to expand the portfolio education mechanism.

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