

# **Multimedia aided Education of Clinical Nutrition using WebPages**

**Japan Universities Association for Computer Education**

**Committee on the Application of Information Technologies in Nutritional Education**

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## **1. Introduction**

In Japan, the improvement in food habits of the people by dieticians (legislation in 1947) and registered dieticians (1962) have contributed to the presence of the longest longevity society in the world. The dietetics education program is designed to train highly qualified students who are able to extend their wide knowledge of the natural and social science of human nutrition to a group of people or individuals, and to provide nutritional care through diet to promote, maintain and recover their health and to improve quality of their life.

Furthermore, there is a need for providing information on nutrition management, meal planning and foods for the public especially for the elderly who are the most rapidly growing segment of the population in Japan. To meet the needs, it is expected to work in closer cooperation with the community and the university by developing dietetics education using multimedia, by gathering and disseminating nutrition information effectively and holding information resources in common, and by interactive education between universities, and distance learning.

## **2. The Curriculum**

Table 1 shows the curriculum for administrative dieticians in Japan. The training programs are designed to provide each student with basics of dietetics education, advanced dietetics education, a working knowledge to cope with the needs of the professional fields, and a proficiency in advocating from dietetic point of view. The fields of study which are expected more development includes the course of Clinical Nutrition.

Table 2 are example of syllabus for Clinical Nutrition Practice education using computer technology and computer-based multimedia. According to the syllabus, we have developed WebPages for nutrition formula based on dietary slips, dietary compositions and the examples of menu in the famous

hospital(Table 2 No 5).

Tab.1 Curriculum for administrative dieticians

Required Courses	Credit
General Education	At least 36 credits
Physical Education	At least 4
One foreign language	At least 8
<i>Specialized Courses (contains lecture, practices and fieldwork or laboratory)</i>	
Physiology	At least 6
Exercise Physiology	At least 2
Pathology	At least 6
Biochemistry	At least 6
Microbiology	At least 2
Food Science	At least 9
Food Additives	At least 3
Nutritional Science	At least 7
Nutritional Guidance	At least 6
<b>Clinical Nutrition</b>	At least 7
Public Nutrition	At least 5
Food Service Management	At least 4
Food Stuffs Hygiene	At least 3
Public Health Science	At least 4
Outline of Health Management	At least 1
Food Preparation	At least 5
Economics of Food Stuffs	At least 2
Principles of Diet	At least 1

Tab.2 Syllabus for Clinical Nutrition Practice (2 credits)

No	Contents of Practice	Using computer-based multimedia
1	Introduction to Clinical Nutrition	Video and WebPages
2~3	Nutrition and diet assessment	Database and application software of nutrition calculation and guidance
4	Diet therapy and methods of alimentation	
5	Nutrition formula based on dietary slips and dietary compositions	Food composition database and WebPages
6	Survey of favorite foods	Application software of statistics
7	Nutrition Counseling for patients Such as diabetes mellitus	Database of exchanging table CAI software
8	Therapeutic diet practice (1) Control by Softening	Database of recipes and its image Internet WebPages
9	Therapeutic diet practice (2) Control by Nutrition Component	WebPages
10	Therapeutic diet practice (3) Weaning food, food for infant	Database of recipes and its image and Internet WebPages

11~14 | Development the aids of nutrition  
15 | guidance  
Presentation and discussion

The various tool of development  
(Digital camera, Video, C.G.software)  
Presentation software

### 3. Constitution of WebPages

The WebPages consists of 4 parts, (1) dietary slips,(2) nutrients requirement of each dietary slip,(3) dietary compositions,(4) the meal image attached to the menu table (Figure 1~3).

### 4.Result

By using this educational material, students can understand how to select the dietary slip and its meal menu visually.



fig.1. WebPage of Menu Table

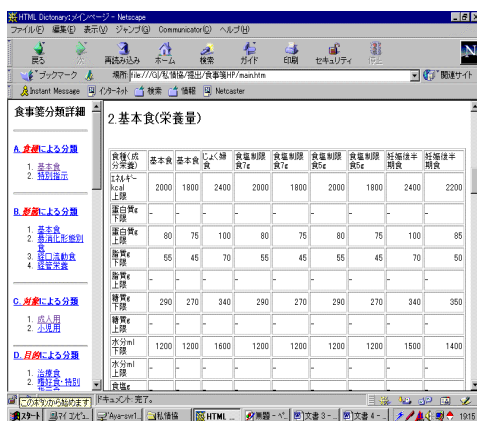


Fig.2. WebPage of nutrients requirement.

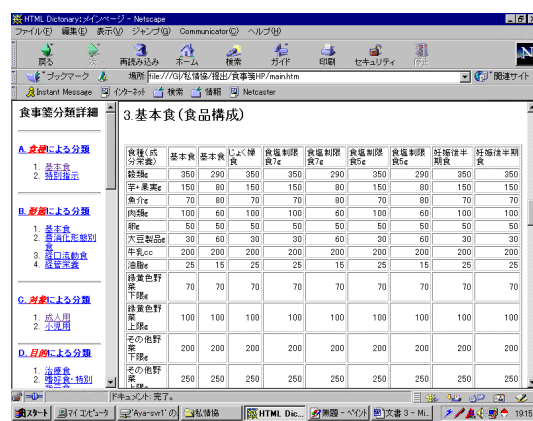


Fig.3. WebPage of dietary compositions