

**A Case Study to Improve the 'Nutrition and Health' Class for Global Nursing Students  
- Focused on the Class at the College of Nursing and Midwifery, L University of  
Cambodia**

**ABSTRACT**

**Purpose:** This study is a case study of a classroom setting to improve the 'Nutrition and Health' class for global nursing students. **Methods:** This study describes a class case conducted from January 9 to February 1, 2025. The subjects were 10 nursing students and 1 professor. The lecture plan, student presentation materials, student calorie and water intake calculation log, professor and student activities, grades, and post-class impressions and reviews were analyzed. **Results:** The lecture was conducted in English, with one student representative and one interpreter assistant assigned, and the explanation of important learning areas was clearly repeated. The textbook was uploaded as a PDF file before class, and was operated according to the 4-year 'Nutrition and Health' syllabus created by the Cambodian government. Individual guidance was given, presentations were made, and mutual collaborative learning was conducted to calculate nutritional calories and water intake. The students compared and learned their eating habits, and the nutritional requirements by life cycle, food affected by culture and religion were presented as individual assignments, and any insufficient areas were revised and supplemented. They directly participated in physical activities such as walking and running, and learned about diets for major chronic diseases and fatal diseases in Cambodia. The evaluation was attendance 10%, midterm exam (multiple choice, fill in the blank, calculation) and final exam (subjective) 30% each, and presentation, participation, and assignments 10% each. The total score of the students was 52 out of 95, with 4 A's, 4 B's, and 2 C's. The class satisfaction was 5 points, and the opinions on volunteer professor were that they hope to meet her again next time, that she is kind, and that they had a new learning opportunity. And the opinion about the classroom was that the projector screen was too dark and small. Although individual guidance on calculating nutritional calories for students was time-consuming, differentiated presentations and collaborative learning provided opportunities for relearning, and individual assignment selection and selection of diets for major chronic diseases in Cambodia made learning more interesting and engaging. The direct physical activities of walking and running provided an opportunity to recognize one's own physical activity. It was learned that differentiated scores for excellent students are required in the evaluation, and that class satisfaction and evaluation should also be presented specifically.

**Conclusion:** Even if it is a subject created by a global government, it is believed that it is necessary to use a variety of methods to repeatedly learn the core content to fully understand, apply nutritional information and data necessary for developing countries, and utilize learning methods that can teach according to each student's level.

**Key words:** Nutrition and Health, Class, Global Nursing Students, Learning

## I. Introduction

### 1.1 Necessity of the Study

Recently, the advancement of developing countries has been steadily carried out in Korea for health projects or education, and this shows its status in education as S. Korea's advanced development in various fields. The 2024 Korean Nursing Evaluation Institute's university evaluation accreditation standards set forth criteria to apply various teaching and learning methods to improve students' academic achievement in theoretical subjects [1]. Therefore, I believe that the field of nursing education in Korea is trying various learning methods, and this has led to many developments in nursing education.

However, nursing education in developing countries around the world is inadequate and poor [2], so there is a need to continuously build a smart educational environment within nursing schools and to create a common curriculum to promote international cooperation [3]. In particular, each country that has become aware of the lack of nursing education after the coronavirus is trying to receive international support to advance nursing education [4], but rather, nursing personnel from developing countries are flowing out to developed countries with good wages and welfare, which is an emergency for nursing personnel in their home countries [5]. At this time, KOICA in Korea is promoting a project to support nursing education and develop the competency of nursing professors and nurses in developing countries[6], which is very encouraging.

Education should be conducted in consideration of the characteristics and environment of the target group, and classes should be conducted appropriately because there are global characteristics, levels, and regional limitations [7]. In particular, Cambodia has health problems and a poor educational environment similar to that of S. Korea in the 1970s, but it is also an environment where IT can be used in combination, so I thought that appropriate dynamic education should be conducted.

The top ten causes of death in Cambodia in 2021 are Stroke, Ischemic heart disease, Lower respiratory infect, COVID-19, Liver cirrhosis, Tuberculosis, COPD, Neonatal disorders, Diabetes, and Hypertensive heart disease. Most of the risk factors for these deaths and disabilities are related to nutrition and diet [8], so nutrition education in the community is urgently needed. Accordingly, the Cambodian government has proposed seven guidelines for children aged 6 to 17 years: eat a balanced diet of each nutrient every day, consume plenty of calcium and protein, eat vegetables and fruits regularly, consume sufficient carbohydrates, reduce salt, sugar, and fat, and regularly check weight and height growth [9].

However, nursing professions are developing nursing leadership capabilities in developing countries and conducting international cooperation projects with the vision of improving global leadership [10]. Through international learning experiences, international health issues provide opportunities to increase various cultural competencies and grow international awareness [11]. In addition, it allows them to directly experience factors affecting the imbalance between health and society [12] and increases cultural sensitivity [13]. In the United States, the core competencies required for public health nurses include ‘collaborating to achieve public health goals’, and this competency is also emphasized by the WHO as a strategy for improving global health [14]. In addition, at the inaugural meeting of the Pacific Heads of Nursing (PHoN), Howard Catton, CEO of ICN, spoke about the importance of nurses in achieving the goals of the global health agenda [15], and the topics discussed over the three days included health emergencies, immunization and vaccines, preventable diseases, maternal and child health, non-communicable diseases, universal health coverage, and primary health care [16]. On International Nurses Day in 2023, the importance of primary health care will be reaffirmed, as the Korean Nurses Association, provincial presidents, and field nurses will work to establish a new role for nurses in the ‘post-COVID-19’ era [17]. Accordingly, global nutrition and health classes for nursing students are considered more important in developing countries.

Since nutrition is presented as a major health issue in public health in Cambodia, it is necessary to actively teach it as one of the competencies that nursing students should have, and also to seek guidance and teaching methods to strengthen competencies, and to conduct field research to improve teaching methods for nutrition and health subjects. Therefore, this study presents the class site in Cambodian and I hope to improve the class by receiving feedback on class goals, learning content, teaching and student activities, evaluation content and methods.

There are many regional and environmental limitations on the level of Cambodian students to apply the form or method of education for nursing development in developing countries

such as Korea. To this end, I present the 'Health and Nutrition' class developed in Cambodia in 2022 as a class at the College of Nursing and Midwifery conducted at Cambodia L University to improve the class, and I hope to contribute to the development of programs for classes appropriate for overseas developing countries.

## 1.2 Purpose of the Study

The purpose of this study is to improve nutrition and health classes at global nursing schools, and the specific purposes are as follows:

- Confirm the goals of global nutrition and health classes for nursing students.
- Confirm the learning content of global nutrition and health classes for nursing students.
- Confirm the teaching and student activities of global nutrition and health classes for nursing students.
- Confirm the evaluation methods and content of global nutrition and health classes for nursing students.
- Confirm the feedback of global nutrition and health classes for nursing students.

## II. Research Methods

### 2.1 Research Design

This study is a case study that explores and describes a classroom setting to improve global nutrition and health education.

### 2.2 Research subjects

The subjects of this study are 10 second-year students in the 3~4 year program of the Nursing and Midwifery Department at Cambodia L university, and the researcher, an educator, conducted the same class twice at the same university.

### 2.3. Research procedures

Check the class objectives, learning content, teaching activities, student activities, and evaluation activities based on the lecture plan, and check the feedback on all class activities.

#### 2.3.1. Data collection and analysis method

The data collection period for this study is the class period, January 9, 2025 to February 1,

2025. The class is 2 credits, 3 times a week, 3 hours per class, and a total of 32 hours including evaluation time. The data was analyzed and used through the lecture plan, class content, teaching method, student presentation report, nutrition calculation log, student presentation, test content, grades, and class reviews.

### 2.3.2. Ethical Considerations of Research

In this study, consent was obtained from the students who attended the class and a small thank-you gift was provided.

## III. Research results

### 1. Research subjects

The general characteristics of the subjects of this study are as follows (Table 1).

Table 1. General Characteristics of Participants (N=10)

Characteristics	N or Mean	Range	Other
Age(year)	20.7	19~36	
3(year)		6	Associate Degree in Nursing(ADN)
4(year)		4	Bachelor of Science in Nursing(BSN)
Male		4	
Female		6	
English Understanding		2	high
level		7	middle
		1	low

\* The professor, the researcher, is a 71-year-old retired female professor from the department of nursing at a college. She has been lecturing in English at this university since 2018, and this is her second lecture on the nutrition and health subject.

### 2. Class operation method

All lectures and learning content were conducted in English. To ensure smooth communication, one student helper representative and one interpreter student helper were designated, and explanations and notices of important learning areas were clearly conveyed through the helpers. The textbook was provided as a PDF file one day before class, and was uploaded in advance so that students could read it in advance. The operation was carried out according to the lecture plan (table 2).

### 3. Class learning outcome (hereinafter referred to as CLOs) and learning content

The class learning outcome of the 'Nutrition and Health' course, which was designated as a 4-year nursing college curriculum by the Cambodian government in 2022, are as follows.

By the end of the course students will be able to :

CLO1 : Explains the components of nutrition and their relationship to energy requirements.

CLO2 : Explain the guideline to healthy eating.

CLO3 : Discuss the changes in nutrition requirements through different stages of life.

CLO4 : Explain the factors influencing nutritional health.

CLO5 : Discuss the role of nutrition in disease prevention and health promotion

As shown in the lecture plan (table 2), the learning contents include 6 areas of major nutrients: carbohydrates, proteins, lipids, vitamins, water, and minerals, energy balance, guideline for health eating, nutritional requirements by life cycle, food influence on culture and religion, nutrition and physical activity, and nutrition and disease prevention. All of these contents are designed to be applied to health promotion. In this learning content, the researcher presented learning content that can be applied to each student based on the six major areas of nutrients, and presented learning content that can be applied to Cambodia in terms of guideline for health eating, nutritional requirements by life cycle, and nutrition and disease prevention.

Table 2. Lecture plan Course Name : Nutrition and Health

No/Date	Content Heading	Number of Hours	Course
		theory	Learning
		30	Outcome
A/ 9 Jan	Introduction to Human Energy Requirements Nutrition in Health and Health Care	1	CLO1
B/ 9 Jan.	Carbohydrate	2	
	Carbohydrate classifications		
	Sources of carbohydrates		
	How the body handles carbohydrates		
	Function of carbohydrates		
C/11 Jan.	Dietary reference intake		
	Carbohydrate in Health Promotion		
	Protein	2	
	Protein composition and structure		
	Function of protein		
D/16 Jan.	How the body handles protein		
	Sources of Protein		
	Dietary reference intakes		
	Protein in Health Promotion		
	Lipids	2	
E/16 Jan.	Triglycerides		
	Function of fat in the body		
	How the body handles fat		
	Fat in foods		
	Dietary reference intakes		
F/16 Jan.	Fat in Health Promotion		
	Vitamins	2	
G/16 Jan.	Understanding Vitamins		
	Vitamin Classification		

	Vitamins in Health Promotion		
	Water & Mineral	2	
F/18 Jan.	Understanding Water Understanding minerals Major electrolytes Major minerals Water and minerals in Health Promotion		
	Energy Balance	2	
G/18 Jan.	Energy Intake Energy expenditure Energy balance in Health Promotion		
21 Jan.	Midterm Examination		
	Guideline for Healthy Eating	4	
H / 21, 23 Jan.	Dietary reference intakes From nutrition to food: healthy eating Asian pyramid for nutrition & in Cambodian : Group* 1		CLO2
	Nutrition Requirement at Different Stages of Life Cycle in Cambodia	6	
I/25 Jan.	Infancy (Birth to 1 year) : G2 Toddlers : G2 Preschoolers : G3 Children : G4 Adolescents : G5 Adults Older Adults		CLO3
		1. Ppt5 page: 1) Required/Reference/Team/date 2) International Level 3) Cambodia Level 4) Conclusion 2. 10 Min. less 3. Q & A + predict	
30 Jan.	Group presentation 1 - 7 (till in 25 Jan.)		
	Culture and Religious Influences on Food and Nutrition	2	CLO4
J/28 Jan.	The effect of Culture Food and Religion : Group P 6		
	Nutrition & Physical Activity : Group P7	2	CLO4
K/28 Feb.			CLO5
L/1 Feb.	Nutrition & Disease Prevention and Health Promotion	3	
1 Feb.	Final examination		

\* Group: This is a task for each individual and group, hereafter indicated as G2 ~ G7.

#### 4. Teaching and Student Activities

The lectures were centered around PPT, and for the four nutrients, calorie calculations were conducted to find out individual nutrients. Carbohydrates, proteins, lipids, and water were conducted twice, once after class and once in the first hour of the next class (Table 3).

Table 3. Teaching and Student Activity

No/Date	Content Heading	Activity		Special Learning
		Professor	Student	Student
A/ 9 Jan	Introduction to Human Energy Requirements Nutrition in Health and Health Care	Lecture	ppt	
B/ 9 Jan.	Carbohydrate	Lecture Check Calculate & Analyze Feedback Each Student	ppt Calculate about Carbs Analyze appropriate Presentation	Individual learning Repeated/ Collaborative learning

C/11 Jan.	Protein	Lecture Check Calculate & Analyze Feedback Each Student	ppt Calculate about Protein Analyze appropriate Presentation Repeated/ Collaborative learning
D/16 Jan.	Lipids	Lecture Check Calculate & Analyze Feedback Each Student	ppt Calculate about Lipids Analyze appropriate Presentation Repeated/ Collaborative learning
E/16 Jan.	Vitamins	Lecture	ppt
F/18 Jan.	Water & Mineral	Lecture Check Calculate & Analyze Feedback Each Student	ppt, Calculate about Water Analyze appropriate Presentation Repeated/ Collaborative learning
G/18 Jan.	Energy Balance	Lecture Check Calculate & Analyze Feedback Each Student	ppt Calculate about Energy Analyze appropriate for yesterday meal Repeated learning
21 Jan.	Midterm Examination		
H/21,23 Jan.	Guideline for Healthy Eating Dietary reference intakes From nutrition to food: healthy eating Asian pyramid for nutrition & in Cambodian : Group P 1	Lecture Check Calculate & Analyze Feedback Each Student	ppt Calculate about Energy Analyze appropriate for family (one) Applied learning
I/25 Jan.	Nutrition Requirement at Different Stages of Life Cycle in Cambodia Infancy (Birth to 1 year) : G2 Toddlers : G2 Preschoolers : G3 Children : G4 Adolescents : G5 Adults Older Adults	Feedback Lecture :Infancy, Toddlers, Preschoolers,Children Adults,Older Adults	G1 Presentation G2,3,4,5 Presentation ppt
30 Jan.	Group presentation 1 - 7 (till in 25 Jan.)	1. Ppt5 page: 1) Required/Reference/Team/date 2) International Level 3) Cambodia Level 4) Conclusion 2. Within 10 Min. 3. Q & A +crdict	In-depth learning
J/28 Jan.	Culture and Religious Influences on Food and Nutrition The effect of Culture Food and Religion : Group P 6	Feedback	Presentation
K/28 Feb.	Nutrition & Physical Activity : Group P7	Lecture Feedback	ppt Presentation
L/1 Feb.	Nutrition & Disease Prevention and Health Promotion	Walk & Run in ground Lecture: Cambodian 10 Diseases Diet Therapy	Direct participation learning ppt
1 Feb.	Final examination		

Since each student had a different learning level, individual guidance was provided when calculating. Students with fast learning levels were asked to present and repeat the learning. Since there was a large difference between students with low and high calorie intake, these students were also asked to give a presentation and relearn. In addition, students with fast



learning levels were encouraged to explain and help students with low calorie intake, which led to mutual cooperative learning.

After completing the nutritional learning content, students were asked to record their daily food intake, calculate the calories and water intake of three nutrients, and analyze whether it was appropriate. Then, on the next learning day, they were given an assignment to choose one family member and calculate the calories and water intake of three nutrients and analyze whether it was appropriate. I checked individually whether relearning was achieved through the assignment, and for families with high-calorie, low-calorie, or water-deficient analyses, I checked the nutritional problems of the family together to see if the analysis was appropriate, and I also told them that they could consult in this way.

In the area of healthy eating, they looked into Cambodian foods that are frequently eaten, and confirmed the habits of eating white rice every day and eating fried food frequently. In the my class, there were many cases where all 10 students skipped breakfast, and they usually ate it during recess, which was also the reason they ate in a hurry or were late for the next class. The dietary habits of these students were studied by comparing them with Korean students, and they were given the task of learning the dietary pyramid created by the Cambodian government to help them recognize a balanced diet.

The nutritional requirements by life cycle were given as individual assignments for each period from newborn to puberty, but since the exact requirements were not provided except for puberty, I learned about the nutritional requirements by level through PPT and identified health problems at the nutritional status of Cambodia, and learned about the nutritional requirements of adults and the elderly in the same way.

In the area of food that affects culture and religion, I taught them through excellently student presentations, and in the area of nutrition and physical activity, I informed them that calories differ depending on physical activity, taught them how to calculate according to the amount of exercise each student had, and had them calculate their own calories and recognize the calories they lacked or increased. In particular, all female students, except for male students, did not do any special exercise at all, and even commuted by motorcycle. Since it was a university with an international soccer field, after learning about nutrition and physical activity, I directly participated in physical activities such as walking and running around the playground during the first hour of the following class, and emphasized the basic necessity of physical activity in daily life.

In the nutrition and disease prevention area, statistics on Cambodia's major chronic diseases and the top 10 death rates were confirmed, and dietary treatments for patients with these diseases, namely tuberculosis, AIDS, diabetes, hyperlipidemia, anemia, ischemic heart disease, lung cancer, duodenal ulcer, chronic lung disease, stroke, and food poisoning, were presented and learned through PPT.

## 5. Class Evaluation Methods and Contents

The evaluation methods and contents were specifically explained in the first hour of class, including attendance, midterm and final exam methods and contents, presentation composition methods, participation contribution scores, and assignment contents, and were also announced and emphasized in the middle of the class. Attendance is 10%, mid-term exam (multiple choice, fill-in-the-blank, calculation) and final exam (subjective) 30% each, presentation, participation, and assignments 10% each, a total of 100% (Table 4).

Table 4. Assessment Task and Grading

Type of Assessment	Appropriate Competency Based Assessment	Course Learning Outcome	%
Academic			
1. Formative Assessment	Assignment/Presentation/Participation	CLO 1,2,3,4,5	30%
2. Midterm, Final / Summative Assessment	MCQ Examination include Short answer question Written	CLO 1,2,3,4,5	60%
None Academic			
3. Attendance			10%

Attendance was reduced by 0.5 points for every hour of absence, 1 point for 3 tardies, and the lowest score was 5 points. The midterm exam consisted of multiple choice, fill-in-the-blank, and calculating calories and water that had been studied repeatedly. The lowest score ranged from 9 to 28 points. The lowest scorer was given an answer sheet to relearn and had to copy it all down to get 5 points. Most of them scored from 22 to 24 points, but most of them did not fill in the blanks completely and did not properly analyze the calorie calculation. The final exam consisted of summarizing the key points of the assignment presented by the student and another student on Cambodian nutrition issues, summarizing Cambodian chronic disease diets, and calculating family calories. Although the other student's assignments and calculating and analyzing family calories were lacking, all but one student scored over 20 points out of 30, but the key points were not perfections and the lowest scorer was given extra time to relearn and had to find and rewrite them.

Presentations were submitted after the deadline or students who did not provide the required amount received low scores. Participation was in Khmer to encourage discussion, and participants were given extra points, so all who actively participated received extra points. Assignments were voluntarily chosen so that students could learn the required amount for each life cycle of interest, but students who did not have a chance to give a presentation due to absence and did not receive sufficient feedback received low scores.

The total scores of the students ranged from 95 to 52 points, as shown in Table 5. There were 4 students who received A grades, 4 students who received B grades, and 2 students who received C grades. The school's grade scale consists of A grade 100-85 points, B+ grade 84-80 points, B grade 79-70 points, and C+ grade 64-50 points.

Table 5. Student Score and Grading

(N=10)

Type of Score	Number of Student	Meaning	%
A	4	Excellence	40%
B+	2	Very Good	20%
B	2	Good	20
C+	1	Fairly Good	10
C	1	Fair *	10

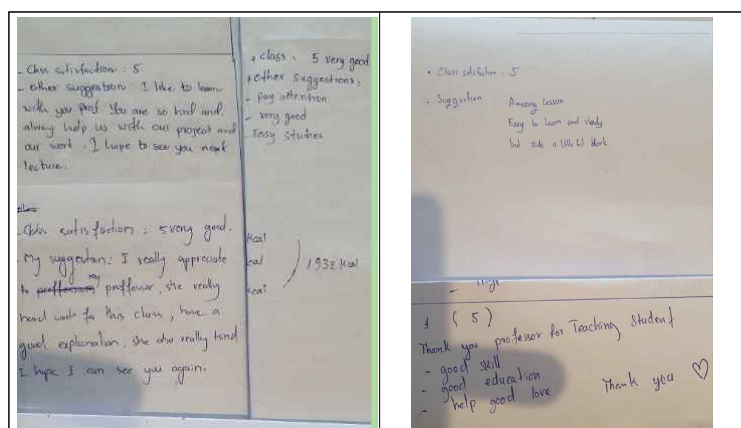
\* Re-learners who took midterm and final exams.

## 6. Feedback after the class

Students gave 5 points on a 1-5 scale for class satisfaction, and their subjective opinions were that they hope to meet the volunteer professor again next time, that she is kind, that they had a new learning opportunity, and that the projector screen was too dark and small (Picture 1).

Picture 1. Satisfaction and opinions after class

(N = 5)



Most students rated their satisfaction level from 1 to 5 out of 5, and their opinions on the lecture were given in the form of short answers such as 'good' and 'very good'. Students who wrote their impressions of at least one sentence presented in Picture 1.

Nutrient calorie calculation, which was carried out for 6 consecutive weeks in the students' learning activities, devoted a lot of time to recognize basic nutrients, but all students fully understood it. Calculating the calories of one person in the family was performed only once and applied to the final exam, so some students were found to be inadequate.

Although individual assignments were very helpful in promoting individual learning, but students who had poor English comprehension, frequent absences, and lateness did not meet the deadlines for assignments and were found to have insufficient content. After calculating the intake of nutrients, calories and water, and presenting it to students who consumed particularly high or low intakes, or analyzing and explaining it to their peers. This collaborative learning improved presentation skills and served as an opportunity for re-learning.

By selecting and learning about the diets for major chronic diseases and diseases that are the top 10 causes of death in Cambodia, they became interested in learning about nutritional issues related to their country's health. When checking the physical activity that is the basis of nutrition among all students, three male students, a retired military soccer player, a male student who is often late and absent, and a male student who is a leader, exercised daily or twice a week, but the remaining seven students did not engage in any physical activity at all. Even though the distance to school was less than 25 minutes, it was found that they used motorcycles, which became an opportunity to recognize their own physical activity. To this end, they walked or ran for 39 minutes before class at the university playground and suggested that they basically practice walking in their daily life.

In addition, assignments were selected based on the individual interests of each student, and with the exception of students who were struggling with learning and frequently late or absent, they performed assignments with greater interest in their areas of interest. After presenting the assignments, participants were given bonus points for asking questions and discussing them, and the students were encouraged to discuss in Khmer, which resulted in high student participation.

In the evaluation area, 10% of the assignment presentation was included, and although the level of effort of the students varied, there was only a difference of 1-4 points, so it was

found that differentiation for excellent students was necessary. In addition, regarding the class satisfaction and evaluation, the 5 students whose English skills were not good gave short answers of 'good' and 'very good', and the remaining 5 students recorded their opinions in detail as in Picture 1.

In addition, considering students who had trouble communicating in English, the subjective questions in the final exam were presented in both English and Khmer, but instead, the test questions were requested to be in English.

#### IV. Discussion

L University, which established the first 4-year nursing college in Cambodia in 2006, established a 4-year midwifery college in 2008 after the initial enrollment of 29 students, and a 3-year school system in 2012. There were no students enrolled in 2014, 2019, and 2021, but since then, it consists of about 10, 3-year and 4-year nursing and midwifery students [18, 19]. Currently, the students are a mix of 6, 2nd-year 3-year students and 4, 4-year students, taking nutrition and health courses. Since Cambodia's 4-year universities require students to pass a test similar to the Korean college entrance exam, the difference in learning ability between 3-year and 4-year students at L University was also evident in the classroom. In particular, in classes taught in English, students generally have a good level of reading and understanding English, but their listening skills are poor, so learning materials are provided in advance and an interpreter is assigned.

A researcher and professor who has been teaching in English at the same nursing and midwifery college for 7 years noticed that the students' English comprehension was lower than that of previous students. Therefore, she conducted classes by having a representative and an interpreter student helper interpret important learning content, tests, assignments, and notices, and checked for understanding. In addition, videos of learning content were translated into Khmer so that students could watch them with subtitles.

In addition, pre-learning materials were uploaded so that students could preview them, collaborative learning among students was encouraged through interpreter assistants, and students' understanding was directly checked through formative evaluations in the classroom, and when most of them were understood, they proceeded to the next learning stage, so it is

believed that there were no major learning problems.

Although it was expected that students would read the learning materials in advance, most did not, so it is believed that learning would have been more efficient if a dictionary quiz or a method of checking key terms before class was administered. Since it was not possible to check individual learning levels, students frequently re-learning during class by writing down the main learning content on A4 paper. However, for ease of storage, re-study, and application, the uploaded learning materials could be printed and used as booklets.

Among the six Course Learning Outcomes (hereinafter referred to as CLOs), I applied the content to learn about healthy eating guidelines for Cambodia, the country of the students, and the nutritional requirements of Cambodians according to their life cycles in CLO 2 and CLO 3. They compared the healthy eating guidelines and nutritional requirements of Cambodia with those of other countries. In addition, they made the students aware of the reality of health issues related to nutrition, and in particular, the dietary therapy for major diseases in Cambodia is important learning content for patients with such diseases that nursing students encounter in the field of practice, and it is an educational area that should be emphasized among the roles of nurses for the future health of Cambodia.

As a student activity, we confirmed that most students had difficulty calculating accurate calories after writing a nutrition diary in the nutrition and health subject three years ago [7]. Therefore, we conducted repeated learning to calculate calories and water intake continuously after class to accurately learn the calories of the nutrients and water intake that they consume. This became an opportunity for most students to clearly understand their basic calorie, carbohydrate, protein, lipid, and water requirements. In addition, we calculated the calorie and water intake of family members, and we learned that they could consult others about their nutrition by evaluating them in the midterm exam. This is considered to be a learning activity that utilizes the principles of relearning and applied learning. We encouraged relearning by having students present or do cooperative learning according to their level. Since all students commute to school by motorcycle and do not do any physical activity at all, we emphasized the importance of exercise, which is the most basic part of the nutritional pyramid, by having students and professors walk one lap of the playground together and run lightly. This is also considered to have encouraged active participation in learning. ~~in the students~~. In addition, it is believed that having students select and perform tasks in areas of

interest in Cambodia on their own helped to stimulate individual levels and interests, which in turn led to more enthusiastic study.

Rather than focusing on one-way learning activities through PPT, teaching activities spent a lot of time helping with and confirming individual calculations to conduct learning activities for students of different levels. However, students were able to learn clearly how the standards for each nutrient intake differ from their own needs. In addition, students with different levels learned from each other, so students with higher understanding learned from students with lower understanding, and they learned other reasons, which became an opportunity for collaborative learning.

In the areas of nutrient needs by life cycle, food affected by culture and religion, nutrition and disease prevention, and physical activity, I applied it to Cambodia and made it an opportunity to directly recognize the problems related to one's own physical activity.

In the class evaluation method and content, most of the answers to the analysis method after calculating calories were just drawn after calculating, but if the question had been asked more specifically, "Draw a table and explain it in 3 sentences," I think the explanation of the analysis would have been better. Individual presentation assignment was 10%, and although the level of effort of the students varied, there was only a difference of 1-4 points, so I realized that differentiation for excellent students was necessary.

If the 'Summary of own assignments, Summary of others' assignments' for the final exam had been announced in advance, it would have been possible to listen more diligently to that area and induce learning at least once, which would have increased the score, so this is an area that requires revision at the next opportunity.

Students who are frequently absent or tardy have the lowest level of English comprehension and need guidance in various aspects of life.

After class, the satisfaction level should be anonymous so that students can honestly express their opinions, and it is thought that the satisfaction level should be specifically measured by learning content, assignments, evaluation methods, and teaching methods. However, interest and motivation were induced by implementing various learning methods such as repetitive learning through presentations, relearning through collaborative learning, experiential learning through nutrition and water intake of oneself and others, in-depth learning on health issues related to nutrition in Cambodia, and participatory learning in which students directly perform physical activities that are the basis of nutrition.

## V. Conclusion and Suggestion

The researcher guided the students according to their level, and did repetitive learning through presentations, re-learning through collaborative learning, and applied learning to calculate the nutritional calories and water intake of oneself and family members. In-depth learning to find and learn about health problems related to nutrition in one's own country, and participatory learning to directly practice lack of physical activity were conducted to encourage learners' interest and concern. Even if it is a subject created by a global government, it is thought that it is necessary to use repetitive learning in various ways to fully understand the core content rather than a large amount of learning, apply nutritional information and data necessary for the developing country, and utilize learning methods that can guide students according to their level. On the other hand, it is thought that university life guidance or some consideration is necessary for learners with very low English comprehension.

key word : Nutrition and Health, Class, Global Nursing Students, Learning

## 4. Reference

1. 2024 First and Second Half Nursing Education Accreditation Evaluation Handbook for Universities, '2.2. Performance-based Curriculum Operation and Academic Achievement Evaluation', Korean Institute of Nursing Education Evaluation, 66p.
2. FAO, 2025 Dietary guidelines, <https://www.fao.org/nutrition/education/food-dietary-guidelines/regions/countries/cambodia/en/>
3. Seon Jeong Kim, Kyung-yong Kim, Byung Hwan Choi, Mei Ling Song. A Study on the Demand of K-Nursing in Southeast Asian Nursing Colleges to Activate International Exchange Convergence in the Untacked Era. Journal of the Korea Convergence Society, 2020 ; Vol. 11. No. 12, pp. 429-438.
4. Bangladeshi nurses training and support to respond to local COVID-19, KOICA data, 2020; 7:28 Tuesday. Cited by: Bangladesh Medical Association
5. Choi Young-kwon. 'War for nurses in advanced countries... Emergency overflow of nursing manpower from developing countries'. Seoul newspaper. 2023 Agust 2 ; Sect. International. <https://www.seoul.co.kr/news/international/2023/08/02/20230802500158>
6. KOICA. Citizen Participation and Jobs [Internet]. KOICA. 2025 [Cited 2024 September 22]. Available from:



[http://www.koica.go.kr/koica\\_kr/984/subview.do?enc=Zm5jdDF8QEB8JTJGYmJzJTJGa29pY2Ffa3lIMkYyOTIIMkYzODYzODUIMkZhcnRjbFZpZXcuZG8lM0Y%3D](http://www.koica.go.kr/koica_kr/984/subview.do?enc=Zm5jdDF8QEB8JTJGYmJzJTJGa29pY2Ffa3lIMkYyOTIIMkYzODYzODUIMkZhcnRjbFZpZXcuZG8lM0Y%3D)

7. Soo-ok You, Min-yeol Lee. A Study of 'Nutrition Classes for Nursing Students in Cambodia. Poster session presented at : Korean Academy of Community Health Nursing Winter Academy Conference, 2023 October 23 ; SK Feture Hall at Korea University, Journal of Community Nursing.

8 .Institute for Health Metrics and Evaluation. Cambodia. [Internet]. IHME. 2025. [Cited 2025 Febuary 22]. Available from:

<https://www.healthdata.org/research-analysis/health-by-location/profiles/cambodia>

9. Lee, Ye Eun, Ban, Keum, OkComparison on Quality of Life and Depression in Nursing Students between Korea and Cambodia, J Korean Acad Rural Health Nurs Vol. 16 No. 1, 11-17, June, 2021.

10. Global Korean Nursing Fundation. Global Leadership Program. [Internet]. GKNF. 2025. [Cited 2025 Febuary 22]. Available from:[https://www.gknf.or.kr/sub\\_eng/business\\_enB09.php#dp3Con](https://www.gknf.or.kr/sub_eng/business_enB09.php#dp3Con)

11.Tuckett, A., Crompton, P. (2014). Qualitative understanding of an international learning experience:what Australian undergraduate nurses and midwives said about a Cambodian placement? International Journal of Nursing Practice 20(2), 135 - 141.

12. Kent-Wilkinson, Arlene, Marie Dietrich Leurer, Janet Luimes, Linda Ferguson, and Lee Murray (2015). Studying abroad: Exploring factors influencing nursing students' decisions to apply for clinical placements in international settings. Nurse Education Today, 35(8), 941-947.

13. Ingeborg Ulvund, Elin Mordal (2017), The impact of short term clinical placement in a developing country on nursing students: A qualitative descriptive study, Nurse Education Today, 55, 96-100.

14. Hanju Lee, Junghyun Choi, Sa Saeng Hyeon, Chun Mi Kim, Young Ran Chin. A Comparative Study between American Public Health Nurse Core Competency and Community Health Nursing Practicum in a Province. Journal of Korean Academy of Community Health Nursing. 2017;28(3):334-346. DOI: <https://doi.org/10.12799/jkachn.2017.28.3.334>

15. World Health Organization. The world health report: Working together for health [Internet]. Geneva: World Health Organization. 2006 [cited 2017 May 28]. Available from:[http://www.who.int/iris/bitstream/10665/43432/1/9241563176\\_eng.pdf](http://www.who.int/iris/bitstream/10665/43432/1/9241563176_eng.pdf)

16.International Council of Nurses. ICN CEO calls new organisation for heads of nursing in the Pacific region a “powerful voice for nursing”. [Internet]. ICN. 2025. [Cited 2020 Febuary

- 14]. Available from:  
<https://www.icn.ch/news/icn-ceo-calls-new-organisation-heads-nursing-pacific-region-powerful-voice-nursing>
17. International Concil of Nurses. ICN CEO calls new organization for heads of nursing in the Pacific region a “powerful voice for nursing” [Internet]. Geneva: International Concil of Nurses. 2020 [cited 2021 June 23]. Available from:  
<https://www.icn.ch/news/icn-ceo-calls-new-organisation-heads-nursing-pacific-region-powerful-voice-nursing>
18. David Koo Kyen Hoe. Mission Of Life University:International Conference in Cambodia, 12th General Assembly, World Christian Nursing Foundation, 2023. January 28.
19. Life University data, 2023. May. 18.