

Full Length Research Paper

Research on curriculum plan and learning achievement for Aromatherapy with the concept of the Chinese five elements

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In Taiwan, people are getting more aware of beauty treatments and the concept of health care. This study hopes to bring all relevant concepts such as Aromatherapy, essential scented oils, medical foods, human meridians, Chinese five elements therapy, and beauty business management into the curriculum design, and seriously considered many factors when designing the curriculum. After that, a teaching experiment was conducted to evaluate if the courses were well planned. The experiment method incorporated a one-group pretest-posttest quasi-experimental design. The sample group consisted of a training class for beauty and body shaping in Pingtung County. After the class was over, a curriculum satisfaction survey was also conducted. All data were analyzed by SPSS with descriptive statistics and t-test for dependent samples. The results are as follows: 1) After the experiment, the curriculum proved to be effective in teaching. 2) Students majoring in Nursing or Cosmetology did not show any statistical difference in learning achievement. 3) After the class was over, students' grades improved and they displayed more knowledge about Aromatherapy. 4) Most students gave positive feedback regarding the learning activities of the Aromatherapy class. 5) Participants thought that this course was helpful in promoting self-interest in Aromatherapy class in the future. Finally, the researcher provided some suggestions for further study and future reference according to the research results.

Key words: Aromatherapy, curriculum planning, learning achievement.

INTRODUCTION

In recent years, humans entering the era of science and technology have lived with stressed and quickly moving lives (Dutta and Souza, 2008; Zhao and Biesta, 2011) such as both physical and psychological stress over burden individuals. This has motivated people to develop and promote health consciousness with natural therapies involving diet, massage, bathing, spas, music, visual psychology and so on to prevent disease (Hayek, 2012; Fanaian et al., 2010). Aromatherapy has its origins in ancient Egypt, China, India and Greece and was widely applied to soothing medical therapy and religious rituals (Wang et al., 2007).

In ancient times, the Chinese believed that nature is composed of five elements, wood, fire, earth, metal, and water and by regulating these five elements all organisms in the cosmos are able to change their fate and luck as well as relax physically and psychologically (Huang,

2005). Traditional medical treatment has been practiced in China. It has a long history that is mainly based on the five energy elements wood, fire, earth, metal, and water that symbolizes the responsive and evolving relationship between humans and nature. The combination of Chinese traditional medication and Aromatherapy also has a long history that brings everything back to nature and enables people to understand the natural order of life in order to reach a balance and energize the body, mind, and soul with the relaxation of five elements and six senses (Sekhar et al., 2008; Katz, 2011).

In recent years, due to the advanced development of technology, Aromatherapy has been used in new devices such as diffusion lamps, ultrasonic spray machines, and essential oils burner to replace traditional method. Different containers are used for diffusion to get the "fragrance" for physical and psychological purification.

Table 1. Aromatherapy course outline (by levels).

Course title	Basic theory of Five-Element Aromatherapy	Hours
Course objective	This course aims to help students understand the theory and techniques of Five-Element Aromatherapy and its application to cosmetics and health care. With the effective integration of Five-Element Aromatherapy into cosmetics application, students will learn about its definition and development and will be able to know how essential oils help the human body as well as safe dosages and usage. This will help students of beauty science to enter relevant job markets.	2 Credits (36 h)
Basic (10 h)	1. Knowledge and Function of Skin	2
	2. Physiology	2
	3. Extract, Selection, and Preservation of Essential Oils	2
	4. Introduction to Essential Oils - Pure and Blended	2
	5. Formula and Function of Essential Oils	2
Intermediate (10 h)	1. Medical Cosmetics and Health Care Therapy	2
	2. Chinese Five-Element Meridian Massage Therapy	2
	3. Detox Massage Therapy with Essential Oils	2
	4. Massage Therapy for Balanced Body, Mind, and Soul	2
	5. Relaxed Emotional Management	2
Advanced (16 h)	1. Hearing - Music Therapy	2
	2. Visual - Color Therapy	2
	3. Smell - Diffusion Therapy	2
	4. Taste - Diet Therapy	2
	5. Touch - Massage Therapy	2
	6. Five Feelings and Six Senses - Self Relaxation Therapy	2
	7. Management of Aromatherapy Devices	2
	8. Management of Cosmetics Business	2

In recent studies, it has been proved that Aromatherapy is effective on reduction of anxiety, pain, and hypertension (Cole and Burt, 2011). Horowitz (2011) also found credible evidence that Aromatherapy can affect mood, physiology and behavior. Similar results are in many other researches (Herz, 2009).

Thus, this study attempts to combine Aromatherapy from both the East and West as well as health care and beauty curriculum planning to design courses suitable for students majoring in Nursing and Beauty Science. The goal is to cultivate professionals needed for the markets, to improve the competitiveness of graduates in the international medical cosmetics market, health care, and beauty science.

Research purposes are as follows:

1. Discussion on the current implementation of the professional curriculum of Aromatherapy;
2. Curriculum planning of Aromatherapy;
3. Discussion on the learning effect of the Aromatherapy curriculum among students majoring in Nursing and Beauty Science;
4. Analysis of satisfaction of the Aromatherapy curriculum among students majoring in Nursing and Beauty Science;

5. Understanding the learning interest of Aromatherapy curriculum between students majoring in Nursing and Beauty Science and their future needs.

MATERIAL AND METHODS

This study uses investigation techniques in order to attempt to understand the demand for cosmetics and the Aromatherapy health care market as well as cultivate Nursing and Beauty Science students with cosmetics, health care, and medical knowledge. Eastern and Western Aromatherapy applications have been added to the cosmetics and health care curriculum for fourth and fifth year junior college students majoring in Nursing and Beauty Science. It is our hope that with suitable applications for the cosmetics and medical market, students in Taiwan are able to develop other job skills.

Course design

Curriculum planning of this study is divided into academic subject and technique learning in two credits (36 h) shown as in Table 1. In addition, professional competences can be classified into four types as shown in Table 2.

Curriculum planning focuses on the development of future aromatherapists and therefore the course concentrates on the practical training of Aromatherapy.

Table 2. Aromatherapy course outline (by professional competence).

Professional competence	Course title	Credits
Related to Physiology	Knowledge and Function of Skin Human Physiology	4
Related to Essential Oils	Extract, Selection, and Preservation of Essential Oils Introduction to Essential Oils-Pure and Blended Formula and Function of Essential Oils	6
Related to therapy application	Medical Cosmetics and Health Care Therapy Chinese Five - Element Meridian Massage Therapy Detox Massage Therapy with Essential Oils Massage Therapy for Balanced Body, Mind, and Soul Relaxed Emotional Management Five Feelings and Six Senses - Self Relaxation Therapy Hearing - Music Therapy Visual - Color Therapy Smell - Diffusion Therapy Taste - Diet Therapy Touch - Massage Therapy	22
Management	Management of Aromatherapy devices Management of Cosmetics business	4

Research tool

Description of the draft expert questionnaire

This questionnaire, according to the literature review, adopts the Likert's five-point scale (most important, very important, important, unimportant, and most unimportant). There are four curriculum planning dimensions in the questionnaire: objectivity, applicability, feasibility, and diversity for the experts to evaluate the importance of each subject. The total average points of each dimension were evaluated with high scores indicating a strong identification to the dimension.

A pre-test was also conducted after the questionnaire design. Validity and reliability were evaluated after collecting the questionnaire with Cronbach's α of 0.828, showing high reliability.

Subjects

Subjects are the key to the success of this study. Two types of experts were surveyed with questionnaires: (1) educators in the technological and vocational system - department directors from colleges and universities; (2) directors or practitioners engaged in either the cosmetics, recreation, or health care industry. In total, the questionnaires were sent to 30 experts and collected with a return rate of 100%. SPSS was used for the analysis after the questionnaire was collected.

Evaluation of the learning effect

Evaluation of development formation: This study uses "cognitive testing of Aromatherapy" as the evaluation tool after consulting relevant Aromatherapy references from both Eastern and Western

traditions as well as literature review. Certification course contents, competence indicators, and concrete objectives of the International Federation of Aromatherapists (IFA) as well as the teaching experience of the author were also incorporated. The author uses basic knowledge of each subject introduced to students according to the teaching objectives to test the understanding of students on Aromatherapy. Multiple choice questions were used.

Draft test questions were reviewed by ten experts from the industry. They proposed suggestions regarding question content and description. The researcher thus modified the pre-test questions accordingly. Non student subjects, a total of 30, were tested to determine difficulty and item discrimination.

For the pre-test difficulty and item discrimination analysis, the evaluation scores of students were ranked in group order with the highest 25% and the lowest 25%. The "difficulty" of each item refers to the average of the correct responses given by the highest and lowest groups while "item discrimination" is the discrepancy derived by deducting the correct responses given by the lowest group (Jian, 2002). For the standard selection, general item discrimination lies in the range between 0.20 and 0.80 (Wu, 2011), so items were selected accordingly. A total of 20 items were left to compile the formal questionnaire.

Pre-testing: The pre-test was conducted on July 8, 2008, one day before the implementation of the teaching experiment to compare whether there was a difference between the two classes before the teaching experiment. Subjects were tested at the same site and time. The researcher supervised the pre-test in person to avoid test issues caused by irrelevant interruptions.

Teaching experiment: This curriculum adopts a quasi-experimental design to conduct experimental teaching in two different classes at the Nursing Department and Beauty Science Department of a junior college. These classes were taught by the

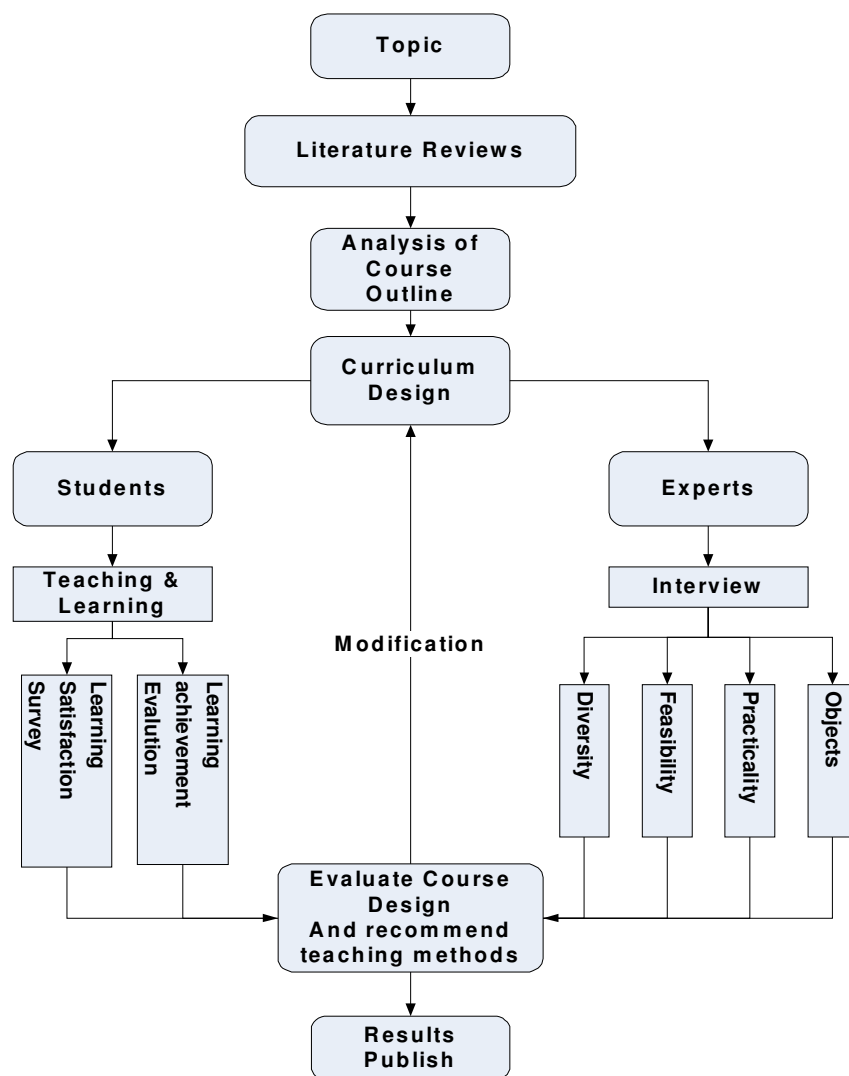


Figure 1. Research structure.

same teacher from July 9 to August 29, 2008, a two-month time frame. The total teaching period is 36 h. The learning responses of students were observed and recorded during classes in order to understand the learning effect of students.

Post-testing: After the teaching experiment was completed in August 2008, subjects were post-tested at the same site and same time. There are two parts of a post-test: conclusive evaluation and learning satisfaction questionnaire. The pre-test, validity, and reliability testing were conducted according to the questionnaire design method. Then subjects were asked to fill in a questionnaire and their opinions toward curriculum planning and teaching contents were collected to form the basis for data analysis. The researcher in the end keyed in and saved the source data and compared the learning effect of the students. Interviews were also conducted separately according to the data and the final results were compiled for the curriculum modification.

Research procedure: The planning procedure of this study is divided into four stages - (1) preparation stage: define the topic and literature collection; (2) curriculum design stage: includes expert evaluation and curriculum pilot teaching; (3) data analysis and

modification stage: evaluate and modify research according to data collected; and (4) final report writing: publish results. Figure 1 show the research structure.

RESULTS

Expert questionnaire analysis

The expert questionnaire analysis (Table 3) showed that in terms of objectivity, the basic curriculum was ranked as the most important and related therapy was ranked as the most important application; thus, these shall both be considered in the curriculum planning according to needs.

Background analysis of individual students

The personal background information of the subjects are

Table 3. Ranking of professional competence in teaching.

Professional competence	Objectivity	Applicability	Feasibility	Diversity
Related to Physiology	Most important	Unimportant	Important	Very Important
Related to Essential Oils	Most important	Unimportant	Very important	Important
Related to Therapy Application	Unimportant	Most important	Very important	Important
Related to Management	Most important	Very important	Important	Unimportant

Table 4. Family, social status, background information on students' analysis.

Social status	Majors					
	Nursing Department	%	Department of Beauty Science	%	Total	%
Low social and economic status	5	14	6	17	11	16
Middle income family	27	77	27	77	54	77
High social and economic status	3	9	2	6	5	7
Total	35	100	35	100	70	100

Table 5. Evaluation comparison between students with different majors in the pre-test.

Department	N	Mean	Standard deviation	Standard error mean	t	Significance
Nursing	35	68.285	13.113	2.216	-1.023	0.310
Beauty Science	35	71.428	12.577	2.125		

Table 6. Evaluation comparison between students with different majors in the post-test.

Department	N	Mean	Standard deviation	Standard error mean	t	Significance
Nursing	35	79.428	9.909	1.674	-0.871	0.387
Beauty Science	35	81.285	7.797	1.317		

Table 7. T-testing of standard deviation of students in the pre-test and post-test.

Category	N	Mean	Standard deviation	Standard error mean	t	Significance
Pre-test	70	69.85	12.85	1.536	45.474***	0.000
Post-test	70	80.35	8.90	1.063	75.537***	0.000

*** p<0.001.

shown in Table 4. Personal background analysis showed that most students are from middle income families or above (77%). There is no significant difference between students majoring in either Nursing or Beauty Science.

Learning effect

After evaluating and verifying the data from all subjects (both pre-test and post-test), the files were keyed in SPSS, and was used to analyze the data. The results showed no significant differences were found between

students with different majors before and after the teaching experiment (Tables 5 and 6).

Table 7 shows the mean of the students in the pre-test and post-test, number of effective observation values, standard deviation, and standard error of the mean. Before the teaching experiment, the evaluation score was 69.85 with a standard deviation of 12.85 where the number became 80.35 with a standard deviation of 8.9 indicating a higher mean after teaching. The performance of subjects after teaching reached 0.001; that is a significant difference and better performance after teaching. Subjects demonstrated a significant change

Table 8. Course content questions.

Questions	Mean	SD
1. Course objectives fit the needs.	4.64	0.810
2. Teaching material presents easy to understand content.	4.39	0.817
3. Teaching material is appropriate.	4.33	0.809
4. Teaching content can link to actual teaching.	4.27	0.850
5. Appropriate assignments are given.	4.34	0.725
6. Course contents inspire my learning.	4.88	0.708

Table 9. Course content questions.

Questions	Mean	SD
7. Instructions are clear and easy to understand.	4.5	0.430
8. Teaching content is adjusted according to student competence.	4.4	0.517
9. Teaching style inspires learning.	4.6	0.309
10. Teachers can help students to think and engage in discussion.	4.5	0.450
11. The examination or assignment of this course helps with learning.	4.7	0.525
12. The teacher prepares well and demonstrates a good teaching attitude.	4.8	0.608

Table 10. Learning effect questions.

Questions	Mean	SD
13. This learning experience will benefit my future learning efforts.	4.8	0.630
14. In general, I consider this style of leaning rewarding.	4.7	0.517
15. I will recommend this course to others.	4.8	0.409

in Aromatherapy cognition after experimental teaching.

Learning satisfaction

The satisfaction survey was filled out by students after the teaching experiment. Three evaluation aspects are included: "course contents," "teaching design," and "learning effect" in a total of 15 questions. The evaluation results are shown below:

Course contents

The questionnaire showed that the majority agreed that the teaching content met teaching needs, linked to actual work, and motivated learning (Table 8).

Teaching design

Most learners gave a positive evaluation to the teaching design and implementation of this course, believed that the assignment helped with learning, and recognized the preparation and teaching attitude of the teacher (Table 9).

Learning effect

The majority of the students recognized the design of this course and believes that this learning experience will benefit their future learning efforts and will recommend this course to others (Table 10).

DISCUSSION

Based on the results, there are two similar findings compared to previous other researches. One shows no significant difference in learning results among different subjects' personal background (Jefferies, 2006; Lan, 2005). Neither is student's major, either in Nursing or Beauty Science.

The second results showed that subjects demonstrated a significant change in Aromatherapy cognition after experiment (Loppolo, 2006; Pichot and Jean, 2005; Richards, 2006).

Also subjects agreed that Five-element Aromatherapy play an important role in health care treatment and should be included in stress relief course for consideration.

And finally, most learners gave a positive evaluation to

the teaching design and implementation of this course. Therefore, it is safe to say that this new course is better than previous curriculum with new element in it.

Conclusions

This study analyzed curriculum planning for an Aromatherapy course and the relevant learning effects among cosmetics and health care students. Methods for planning and designing an Aromatherapy course and maximizing the benefits of students are an important issue in education. After two months of data collection, curriculum planning, questionnaire surveys, interviews, opinion exchange and teaching experiments to test feasibility, this study proposes the following conclusions and suggestions:

- 1) Post-test after the teaching experiment found that students demonstrated significant progress in Aromatherapy knowledge and competence. This teaching experiment should be conducted in a larger scale.
- 2) Most subjects recognized the curriculum planning and believed that this course benefited and inspired learning.
- 3) This experimental curriculum can be incorporated with existing courses in Beauty Science, Leisure or Health Care departments. If two credits are offered, students can complete this course within one semester in either an elective or required course.
- 4) The Aromatherapy curriculum focuses on both theory and practice. Students begin with a basic knowledge and move on to an advanced level gradually.

Suggestions

- 1) Future studies shall address more influential factors on the learning effect. Due to cost and time limitations, this study only conducts an initial discussion on the curriculum. If more sustainable benefits of the learning effect would like to be offered, an in-depth study shall be conducted in each aspect such as internal and external factors of personal characteristics, interests, and attitudes of students as well as classroom atmosphere.
- 2) The professional backgrounds of teachers are keys to successful teaching. Future studies should explore differences in learning effects for classes taught by teachers with and without an Aromatherapy background.

3) The evaluation after the teaching experiment may present short term memory retention after learning. Students may show significant progress due to memory retention, so future studies may prolong the time for the post-test or attempt to use more reliable evaluation indicators to accurately evaluate the learning effect on students.

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