

Creative teaching incorporated into the design of a functional costume for pet dogs: A case study of Shiba Inu

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Abstract

Aim: The study's overarching goal is to find ways to incorporate the functional clothing of pet dogs into creative teaching to use imaginative thought to stimulate students' creativity and hone their abilities by having them put them to practical use while also taking into account the practical concerns of safety, comfort, and special applications.

Method: An expert validity-evaluation questionnaire of pet clothing and a pet dog functional clothing rating scale, both ranked on a Richter Likert five-point scale, were compiled after a discussion and analysis of the relevant literature, and the questions were tailored to the study's aim. Part 1 of the questionnaire is dedicated to the expert and owner's personal details, Part 2 to the dog itself, and Part 3 to the expert's and owner's thoughts on the best apparel for their pet.

Findings: The survey data shows that when shopping for dog clothing, respondents care most about three factors: functionality and comfort (12.5%), safety and quality (14.3%), and practicality (16.1%). Most dog owners (45.5% of those surveyed) say they are willing to spend between NT\$500 and NT\$1,000 on a costume for their pet, and those same people (45.5% of those surveyed) say they currently own five to nine different pet dog costumes.

Implications/Novel Contribution: According to the research results, there has been a rise in the demand for high-quality pet products like food, clothing, and housing. Industrial connections made possible through costume design curriculum materials will increase the field's applicability, pique students' interest, and bridge the gap between the business world and universities.

Keywords: Pet Dogs, Functional Clothing, Creative Teaching

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INTRODUCTION & LITERATURE REVIEW

The idea of having a pet and the associated pet food, clothing, and transportation have become important reference indicators for the pet industry, which offers a wide variety of products and services, thanks to the quality-conscious nature of today's consumers. As a result of this shift in thinking, there is now an infinite number of ways to make money in the pet industry (Thibaud, 2017). As a result of multicultural education policies, not only have students been affected, but so have teachers who need more professional and technical skills and rely too heavily on outdated examination programs and practical teaching methods. The current trend in the pet industry is to use industrial links to create clothing that will excite and motivate students to study.

Pet Dog Shiba Inu

According to the definition of "pet" in Article 3 of Chapter 1 of Taiwan's "Animal Protection Law", "pet refers to dogs, cats and other animals kept or adopted for the purpose of playing with or being companion." This study refers to the world's top 10 rankings of most adorable dogs (Schaal, 2016): United Kingdom/British Cocker Spaniel, Japan/Shiba Inu, Ireland/Setter, China/Shar Pi, United Kingdom/Bedlington Terrier, Germany/Dachshund, China/Pug, Germany/Weimaraner, Canada/Newfoundland, and Scotland/Fox Terrier. In view of the moderate size of Shiba Inu and the large number of Shiba Inu kept as pets in Taiwan, Japan/Shiba Inu is taken as the object of this

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study.

Creative Teaching Method

Creative thinking (CT) teaching is a mode in which professional teachers inspire students to think more creatively through the teaching of a course in a stimulating way (Boonphadung, 2017; Hsing & Chia, 2017). CT is originally meant to be a mode to create a method for "thinking creatively." "Thinking" and "creation" are different, for thinking is a must for creating, but (Pradhan, 2016; Wang, 1988).

Chen (1988) proposed the "ATDE of Love" creative teaching mode, and the following four teaching strategies of asking, thinking, doing, and evaluation are described as follows.

(1) Asking

After teachers put forward the question of creative thinking", they ask students to think about it with the design and arrangement of the course. The stimulation of the problem urges students to use existing ideas and knowledge and their imagination to come up with a feasible solution to the problem.

(2) Thinking

The questions asked by teachers in class enable students to raise their imagination and thinking space.

(3) Doing

All kinds of activities can help students acquire the thinking ability in the process of execution and apply the field of study in practical operation.

(4) Evaluation

The goal is to design a set of evaluation criteria for teachers and students to discuss with each other to appreciate and choose the most suitable and best answer, so that more attention is paid to the beauty of the details of creation in the process of evaluation.

Functional Clothing

The earliest origin of clothing was to protect the body and reduce environmental impact. The term "function" originated from Japan, so it can be understood that functional textiles began in various chemical fiber factories in Japan. The research and development direction of the textile industry in the 21st century emphasizes ecology, environmental protection, and health and safety, while the requirements for health and safety textiles are mainly antibacterial, odor-resistant, mildew-proof, insect-proof, antiallergic, heat storage and heat preservation, ultraviolet resistance, electromagnetic shielding, and other functions. A wide variety of functional clothing has since been developed. Lee (2007) believes that current consumers requirements for textiles are different from previous ones. For example, the emphasis on clothing textiles has changed from light weight and elasticity of clothing materials to such functions as moisture permeability, water resistance, antibiosis, and mildew resistance.

Lin (2006) proposed that functional clothing products can be roughly divided into three categories: comfort, safety, and special use. Energy saving, heat storage, UV protection, antistatic, and electromagnetic wave resistance are the mainstream of the current consumer market. Functional textiles may have multiple functions at the same time, such as moisture absorption and perspiration, as well as antibacterial and deodorizing features.

According to these scholars' opinions, functional clothing is defined by this study as clothing with comfort, safety, and special functions. This study helps design creative teaching courses on pet clothing with these three important features of functionality. Teachers design three pet clothing items that conform to functionality so as to inspire students to expand their creative works of pet clothing design. Through creative teaching, students' design inspiration scope is expanded. The course scoring method is divided into students' mutual evaluation and experts' evaluation, and the evaluation content has the six form conditions of modern fashion design: creativity, aesthetics, foresight, economy, practicability, and feasibility.

Functional Requirements

In addition to the basic comfort and functionality of clothing, lines and beauty are also an important basis for people to choose and buy, and the functional requirements include: (1) good practical functions, such as waterproof ability, windproof ability, warmth retention ability, moisture absorption and perspiration ability, etc.; (2) good




appearance; (3) easy to wear and maintain; (4) safety and comfort, such as soft and comfortable touch, antistatic ability, etc.

According to the above-mentioned documents, functional clothing will have unlimited market development potential in the future through further research and development of textile products such as technical fabrics and artificial materials and with humanization consideration. Researchers will extend human functional clothing to pet dog clothing design to meet the basic safety needs of body protection, achieve the best pet comfort by matching functional requirements with comfortable tailoring and making, and combine with the current popular elements to make pet clothing design more versatile.

Modern Functional Clothing for Pet Dogs

According to the definition of functional clothing for the three groups of comfort, safety, and special use proposed by Taiwan's functional textile industry in 2015, the researchers have sorted out modern functional clothing of pet dogs.

Table 1: Modern functional clothing for pet dogs

Functional Characteristics	Remarks
Comfort 	Clothing style: casual clothes/coveralls Color & material: gray/bamboo cotton Clothing design features: Ventilated, sweat-wicking, skin-friendly, and temperature-regulating functions. In order to reduce pet allergy to some clothes, choose bamboo trees that grow without pesticides to avoid pet allergy to chemicals or synthetic materials mixed with some clothes.
Safety 	Clothing style: outdoor clothing/anti-bacteria and anti-ultraviolet clothing Color & material: light grey/antibacterial cloth Clothing design features: It can effectively prevent mosquitoes, horse ropes, fleas, and ticks from attaching to pet skin or hair and can effectively isolate most of the ultraviolet rays (UPF 40 +).
Special purpose 	Clothing style: Other/ LED luminous clothing Color & material: Bright color/LED material Clothing design features: 1. LED vests and clothes include microprocessors, low-power Bluetooth chips and 3.7W lithium batteries. Owners can change their patterns at will and change icons through APP programs provided by manufacturers. 2. When the pet dog is too far away from its owner, the vest will display a "lost dog" message so that passers-by can also rescue the pet.

Types of Pet Dog Clothing

This study's scope is to look at the functional clothing design of a Shiba Inu as a pet dog. Presently, there are no relevant books on pet dog clothing. Through the use classification of human clothing as contained in cultural clothing lectures, women's clothing books, the researchers assessed the suitable clothing classification for a Shiba Inu, such as walking clothes, casual clothes, formal clothes, and other clothes.

METHODOLOGY

Bring functional costumes into pet dog costumes and design costumes for different fields. Teachers will make finished products according to expert indicators. After finishing the functional costumes for pet dogs, they will carry out creative teaching in the fashion department of technical high schools to inspire students' creativity. The students' works will then be assessed by each other and scored by the experts to see if the works are creative,

aesthetic, forward-looking, economic, practical, and feasible.

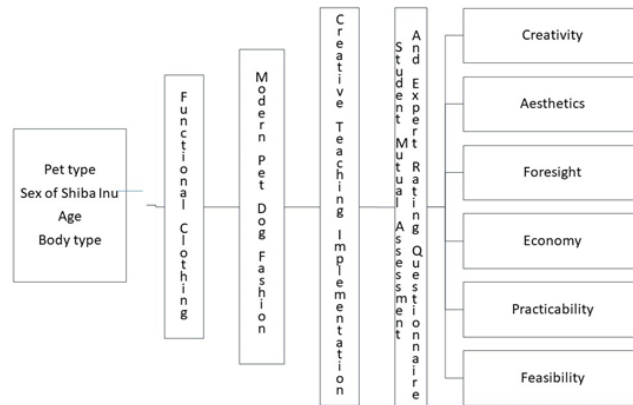


Figure 1. Research architecture diagram

Research Tools

After discussing and analyzing the relevant literature, according to the purpose of the study the questions were compiled into an expert validity - evaluation questionnaire of pet clothing and a pet dog functional clothing rating scale, ranked by the Richter Likert five-point scale.

Expert validity evaluation questionnaire of pet clothing

The questionnaire consists of three parts: Part 1 is the basic information of the pet dog expert and the owner, Part 2 is the basic information of the pet dog, and Part 3 is the pet dog expert and the owner’s evaluation of pet clothing.

Table 2: Modern functional clothing for pet dogs

Type/style	Question
Types of pet dog clothing	Walking clothes, casual clothes, formal clothes, others
Walking clothing style	Coat, jacket, cloak, sweater, dress
Casual dress style	Dress, shirt, vest, jumpsuit with cap, pocket shape, jeans skirt
Formal clothes style	Small dress, dinner suit, suit
Other styles	Heating clothes, cooling clothes, sanitary pants, diapers, raincoats, life jackets, aprons, bathrobes, swimwear, and styling clothes
Pet dog clothing accessories	Hats, collars, backpacks, socks, shoes
Pet dog accessories feature =/function	LED warning light, reflective strip material, wind-proof material, water-proof material, mosquito/antibacterial material, breathable material, shaped fit, multiple-purpose garment, light sensing device, temperature sensing device, humidity sensing device, heartbeat detector, GPS tracker, time feeder

Functional clothing rating scale for pet dogs

The questionnaire consists of three parts: Part 1 is the basic information of the pet dog expert and the owner, Part 2 is the basic information of the pet dog, and Part 3 is the pet dog expert and the owner's evaluation of pet clothing.

Table 3: Functional clothing rating scale for pet dogs

Dimension	Question
Creativity	1. Compared with other pet dog costumes, the dress style and function are innovative
	2. Compared with other pet dog costumes, the model structure design is innovative
	3. Compared with other pet dog costumes, the costume pattern is innovative
	4. Compared with other pet dog costumes, the fabric is innovative
	5. Compared with other pet dog costumes, the use of colors is innovative
	6. Compared with other pet dog costumes, the workmanship or production techniques are innovative
Practicability	1. The clothing fabric has comfortable characteristics such as moisture absorption and air permeability
	2. The function of clothing meets the daily needs of pet dogs
	3. The pet clothing function has the safety performance of injury protection
	4. The pet clothing is convenient to wear
	5. Pet clothing has multiple use functions
Aesthetics	1. Pet dog clothing design has a unique style and conforms to the fashion trend
	2. Clothing pattern is simple and streamlined
	3. Clothing colors and fabrics are properly matched
	4. Clothing decoration is novel and the craft is exquisite
	5. The overall effect of clothing conforms to consumers purchase demand
Feasibility	1. The design size of the clothing pattern structure is appropriate
	2. Clothing appearance fully predetermines its functional characteristics
	3. Functional design can be loved by modern fashion trends
Economy	1. Clothing materials and production conform to product positioning
	2. Clothing price positioning has a good market advantage
Foresight	1. Meets the future pet dog commodity demand trend
	2. Increase the competitive advantage in combination with the trend of scientific and technological innovation

RESULTS AND DISCUSSION

This chapter is divided into four sections: Section 1 Expert Validity - Evaluation Questionnaire of Pet Clothing; Section 2 Design Process of Shinba Inu Clothing; Section 3 Teacher's Presentation of Teaching Demonstration of Shinba Inu Clothing Design; Section 4 Creation Teaching Course of Pet Dog Clothing, Section 5 Conclusion and Suggestions.

Expert Validity - Evaluation Questionnaire of Pet Clothing

Based on the literature and the collection of modern pet dog clothing design works, this study summarized the design elements of pet dog clothing and distributed the design questionnaires to 11 experts to for their answers. The fuzzy weight evaluation values of experts were summarized, and the statistical results were taken as the direction and basis for the teaching of Shinba Inu clothing design.

Researchers have included the styles with a weight higher than 0.51 in the design reference index of teaching research, and the walking clothing has a weight higher than the index, including coat, jacket, and sweater; the casual clothing has a weight higher than the index, including dress, vest, hat, and pocket style; the other style has a weight higher than the index, including raincoat and styling clothes; the pet dog clothing accessories have a weight

higher than the index, including collar; the pet dog accessories function/feature have a weight higher than the index, including LED warning light, reflective strip material, windproof material, waterproof material, mosquito proof/antibacterial material, breathable material, shape fitting, multiple purpose clothing, heartbeat detector, and GPS tracker.

x' Design Process of Shina Inu Clothing

Phase 1

According to the modern pet clothing style, color, material, clothing design features, and functionality, two aspects of the modern pet clothing design relationship can be summarized: (1) functional clothing practice and application; (2) modern clothing design form conditions .

(1) Functional Clothing Practice and Application

This study defines functional clothing as the three categories of comfort, safety, and special-purpose proposed by Taiwans functional textile industry in 2015. Among them, keeping warm, staying cool, and other uses are all in the category of comfort; fire-retardant, antibacterial, UV-proof, and antistatic applications belong to the safety category; and bullet-proof and high tension are mostly applied functions, belonging to the category of special purposes.

(2) Modern Clothing Design Form Conditions

Modern fashion forms are popular and diverse. As far as design conditions are concerned, the fashion designer Lin Guoji has put forward five elements of fashion design: creativity, aesthetics, foresight, economy, and rational design. The researchers of this study have integrated the above arguments into the teaching direction and set the modern clothing form conditions as six: creativity, aesthetics, foresight, economy, practicality, and feasibility.

Phase 2

After clothing design and production were completed, a questionnaire survey was conducted through the scores of five experts. The contents of the questionnaire were analyzed according to the modern clothing form conditions summarized in the first stage. To obtain correct and valid data results, the five-point scale was used to obtain statistical data by means of the questionnaire so that students can understand the advantages and disadvantages of the design.

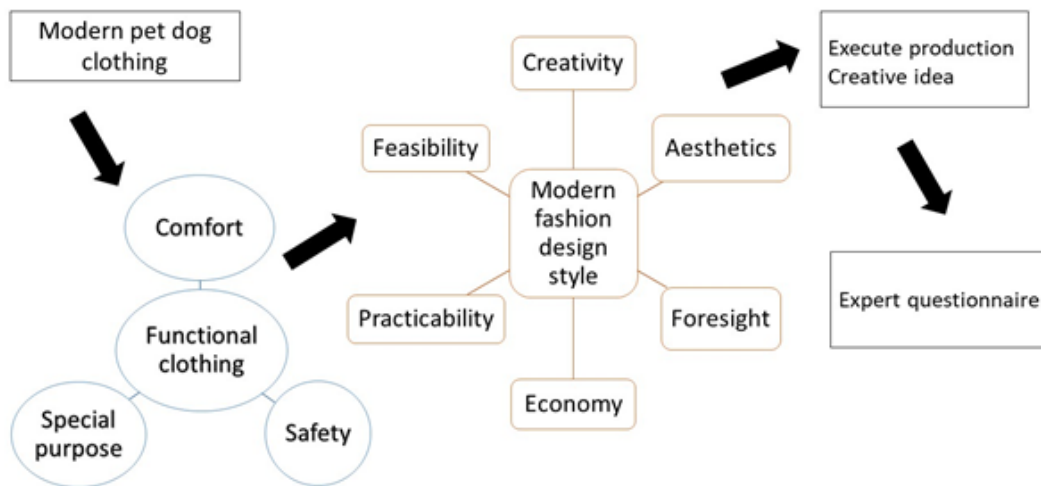


Figure 2. Design process flow of shiba inu clothing and modern pet clothing (Source: Compiled by this study)

Teacher’s Demonstration to Present the Creation Design of Shiba Inu Clothing

After the clothing was completed according to the pet clothing design and production process, the teacher presented the design of Shinba Inu clothing and developed three functional pet clothes: one for all clothes, multi-functional performance vests, and growth vests, which were used as teaching inspiration materials.



Figure 3. One for all clothes



Figure 4. Multifunctional performance vest



Figure 5. Growth vest

Pet Dog Clothing Creative Teaching Course

In the 8 weeks of course study with a weekly time of 4 hours, the creative teaching method was used, the basic style and related knowledge were learned, the students own design styles were added, and the elements were rearranged to achieve innovation. The following are the unit names, teaching objectives, and teaching strategies of the course.

Table 4: Pet dog clothing creative teaching course

Unit Name	Teaching Objectives	Teaching Strategy
Week 1: Get to know a pet Dog clothing	Understand the course content and practical skills of this semester	Use creative teaching with the creative teaching mode of ATDE of Love " put forward by Chen (1988) , and guide students to learn under the four teaching strategies of "asking, thinking, doing, and evaluation"
Week 2: Basic pattern drawing	Understand the pet dog's customized key points, the process, and principle of the prototype pattern-making	The prototype drawing method used by the industry is taught to students, with the aim of achieving a link between industry and university, making the pet dog pattern smoother and more functional.
Week 3: Cross-domain learning	Let students receive different stimuli through thinking in different fields	With the development of electronic design and the combination of functional clothing, cross-domain cooperation and clothing diversification are achieved

Table 4: Continue

Unit Name	Teaching Objectives	Teaching Strategy
Week 4: Pet Dog Basic Edition (1)	Extended version design from pet dog prototype	Use the basic prototype to bring about change, so that students can draw inferences and put it all together.
Week 5: Understanding functional fabrics	Let students know about various functional fabrics	Through different cloth properties, students can think about them and discuss their differences and use them in practice
Week 6: Pet dog clothing pattern cutting	Explain the pet dog clothing cutting and making process and use 1/2 typesetting cutting to make it easier for students to learn	Because of the large amount of fabric consumables, using 1/2 to let students quickly understand the structure, which is different from the traditional way in the past
Week 7: Pet dog costume making	Make the clothing according to the classification and have the clothing restructured	Let students actually operate to find out problems and solve them in time, which will help students to think about problems and give full play to their design ability.
Week 8: Mutual evaluation of overall effects	Students evaluate each other with expert evaluation and carry out the results that need to be trimmed	Through the process of communication, students can understand whether there is a gap between the basis for students and experts to score and also increase their aesthetic quality through the process of mutual evaluation.

CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS

1. Teaching Indicators for Functional Clothing of Pet Dogs

According to the statistics of the questionnaire, the top 3 items to be considered in buying pet dog clothing are: practicality, accounting for 16.1%; safety and quality, accounting for 14.3%; and functionality and comfort, accounting for 12.5%. This is in line with what is proposed by Lin (2006) that functional clothing products can be roughly divided into three types: comfort, safety, and special use. Researchers used these three types as teaching materials for students to create and made three types of functional clothing for pet dogs as teaching materials to inspire the students to think.

2. Pet Commodity Market Used in Teaching Materials

According to the questionnaire, the owners answers to "how long will they buy new pet dog clothing", "how much will they spend to buy a pet dog clothing", and "the number of pet dog clothes" show that the owners buy new pet dog clothing on average every half year, accounting for 45.5%; the owners are willing to buy a piece of clothing at NT\$500 1000, accounting for 45.5%; at present, most owners have 5-9 pieces of pet dog costumes, accounting for 36.4%, which is in line with Hsing and Chia (2017) proposal that modern people pursue quality and quality, which comprise an important reference index for the pet industry in terms of pet feeding concept and pet food, clothing, and housing. Teaching materials will increase the practicality of costume design through industrial links and help increase students' interest and reduce the gap between industry and academia.

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