

Research Article

Research on Construction of Characteristic Teaching Material of Project-based Integration of Theory and Practice of Packaging Design in Higher Vocational College

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Abstract: The aim of this research is to construct a kind of characteristic teaching material of packing design which is project-based integration of theory and practice in higher vocational college. This study has analyzed the main problems of the existing teaching materials of packaging design and then a series of countermeasures for the construction of teaching material of project-based integration of theory and practice of packaging design have been proposed including constructing the teaching material contents of project-based integration of theory and practice, adopting the organization form of teaching material of circumference type, adopting the arrangement form of teaching material in which the picture and its accompanying essay are both excellent and adopting the loose-leaf binding form. It also expounds that to construct the teaching material is necessary at present. On this foundation, the research conclusion on the construction of teaching material of packing design is done.

Keywords: Construction of teaching material, contents of teaching material, higher vocational education, integration of theory and practice, packaging design, student operation

INTRODUCTION

The course of packaging design which is set up in art design majors of higher vocational college is one of the most important specialized basic required courses. This course serves as a connecting link between the preceding and the following and it directly affects the quality of talent cultivation of art design majors in higher vocational college. As the main carrier of teaching contents, teaching methods and teaching means, teaching materials are the gist and fundamental guarantee for teaching activities and are the main way to achieve talent cultivation. With the improvement of the quality requirements of talent cultivation, the construction of teaching material puts forward higher requirements for the function of talent cultivation (Li *et al.*, 2015). A high-quality teaching material could play an enhanced role in promoting teaching quality. The quality of teaching material of packaging design will directly affect the quality of talent cultivation of art design majors in higher vocational college (Liu and Zhong, 2011).

As one of the front-line workers engaged in the design teaching in colleges and universities, from teaching experience of packing design course, it is clearly felt that the gap and problem between the existing teaching materials of packing design and the training target of application-oriented talents are

obvious, which seriously affects the quality of application-oriented talents training (Jiang and Liu, 2016). Therefore, it is urgent to carry out the research on the construction of teaching material of packaging design, writing the excellent teaching material that adapts to the training goal of application-oriented talents in higher vocational colleges, which is the main purpose of the author to write this study.

The research purpose of this study is to construct a kind of characteristic teaching material of packing design which is project-based integration of theory and practice in higher vocational college. The project-based integration of theory and practice disregards the simple theoretical interpretation and the simple practical operation, taking the actual design project as the teaching source material (Ouyang and Ouyang, 2014). Firstly, teachers make the task decomposition for the project and for the specific tasks teachers operate and set an example while explaining theoretical knowledge. Then teachers let students conduct group discussion and practical operation and ultimately complete the project collaboratively. Finally, teachers evaluate the project according to the completion status (Li, 2016). The project-based integration of theory and practice effectively combines the learning of theoretical knowledge and the training of practical operative ability and turns the knowledge into the actual post ability, which lets students feel the practicability of the

knowledge what has been learned, so as to achieve zero distance of teaching environment and business environment, which not only conforms to the training objective of higher vocational college, but also fits the packaging design course that has fairly strong applicability (Yu, 2012). Therefore, it is urgent and necessary to carry out the research on the construction of the characteristic teaching material of packing design which is project-based integration of theory and practice in higher vocational college.

MAIN PROBLEMS EXISTING IN TEACHING MATERIALS OF PACKAGING DESIGN

Teaching materials lacking distinct features of higher vocational college: The teaching materials of art design majors in higher vocational college should highlight the characteristics of higher vocational education. At present, in China's theoretical circle of higher vocational education, there are six aspects about the basic characteristics of talent cultivation of higher vocational education, being the characteristic of grass-roots level of service direction, the technicality of talent cultivation type, the comprehensiveness of professional quality, the applicability of teaching content, the practicalness of teaching process and the cooperativeness of running schools of higher vocational education. Therefore, the teaching materials of packaging design as one of the important carriers to realize the talent cultivation of art design majors in higher vocational college should also be closely linked with the education idea of higher vocational college, reflecting the characteristics of higher vocational education. But at present the teaching materials of packing design that are adopted by most of the art design majors in higher vocational college are the ones of undergraduate course, of which the theoretical property is stronger. They pay more attention to the systematicness of disciplinary knowledge, but the characteristic of applicability is not obvious, mainly shown in the following several aspects (Liao, 2013).

Firstly, the existing teaching materials of packaging design do not well embody the characteristics of practicality in higher vocational education. Through surveys and interviews, it is found that the practice teaching accounts for 90% in the teaching process of packaging design course of art design majors in higher vocational college, but most of the existing teaching materials of packaging design are almost theoretical contents, very little practical contents and the packing design works in teaching materials are less connected with the era, culture and other aspects, making the content more boring and unitary. The living side that should be had by packaging design is not presented to the students, which will greatly reduce

their learning motivation for students in art design majors (Jiang, 2014). At the same time, the students' cultural foundation of art design majors in higher vocational college is relatively poor and the knowledge reserve of courses is insufficient, especially for courses such as packaging design, so that faced with the contents of teaching materials, it is easy for them to engender the daunting and conflicting emotions psychologically and it is possible that their interest in learning this course has been strangled from the beginning, so the "best teacher" that could prompt them to learn is driven away. The absence of the practical teaching content in teaching materials is contrary to the teaching characteristics of emphasis on practicalness in higher vocational education (Liao, 2013).

Secondly, the existing teaching materials of packaging design do not well embody the characteristics of applicability in higher vocational education. The statement of pure theoretical content will also make students feel uncertain about what the connection between the theory and the practice of packaging design is and what the significance of learning packing design for design activities is and which aspects the applicability embodies (Jiang and Song, 2015). Most teaching materials are all a list of theoretical knowledge such as the history, the visual elements and the modeling elements of packing design and the visual elements are discussed in terms of the visual elements and the modeling elements are discussed with respect to the modeling elements. In the teaching materials, there are few practical teaching links, except that part of the teaching materials guide students to practice by setting up unit training and homework, but there are no chapters that guide students to operate, so that students don't know how to apply theoretical knowledge to their own design practice even if they have learned theoretical knowledge, which makes the whole teaching process difficult to stimulate students' enthusiasm for learning. At the same time, the explanation of too much theoretical contents often makes the students feel like being bound hands and feet and have no way to start, producing the opposite effect (Liao, 2013).

Finally, the existing teaching materials of packaging design do not well embody the characteristics of cooperativeness in higher vocational education. This cooperation could be understood as the cooperation between universities and enterprises, the cooperation between professional teachers and enterprise designers and the cooperation between higher vocational colleges, in the construction of teaching materials. In the existing teaching materials of packaging design, the setting of teaching material chapters, the writing of teaching material contents and the arranging of post-class unit training and homework all do not embody the characteristics of cooperativeness. Almost all the teaching materials are

completed by the teachers in universities and most of the teaching materials are accomplished by the professional teachers who are engaged in the research of art design in universities cooperatively or independently (Jiang and Sun, 2015). Because of the influence of their own consanguinity of scholarships, the teachers engaged in the research of art design have compiled the teaching materials, in which the systematicness of subject is still relatively emphasized, while the knowledge of design applicability is not given enough attention (Liao, 2013).

Obsolete contents of teaching material: The similarity of existing teaching materials of packaging design is extremely high. No matter from which angle to analyze these teaching materials, they are all much of a muchness.

Firstly, most of the teaching materials all begin with an overview of packing design, where basically started with packing history. After that, the other chapters are basically inseparable from the visual elements, the modeling elements and the positioning design of packing design. Among them, the visual elements of packaging design basically all introduce the color elements, the text elements, the graphic design performance and the packing layout; The modeling elements of packing design basically all introduce the selection of packing materials, the modeling design of packing container and the structure design of paper packing; The positioning design of packaging design basically all introduce the market research, analysis and collation, design thought, design performance, hand sketching and computer production. All kinds of teaching materials of packaging design are basically all these contents and only the name is slightly different.

Secondly, most of the contents of teaching materials do not involve many new materials and processes. The development of things is constantly progressing according to the law and we should also actively try to make students understand the new materials and processes that are closely related to our life through the teaching materials.

Finally, many of the packaging design works presented in teaching materials are the outdated and obsolete packing works that are not consistent with the current era and they fail to show the characteristics of keeping pace with the times.

Single knowledge structure of teaching material: Most of the teaching materials of packaging design give priority to the theory teaching, lacking of practical training, which could not well manifest the characteristics of higher vocational education and could not also make the teaching materials well embody the characteristics of guiding practice with theory and the service for the professional practice. When students get the teaching materials, the rigid, single

and ragescent information is instilled into their mind and it is also easy to make students generate the extreme understanding for packaging design course itself, so that in the study a strong psychological resistance to packing design course is generated, which goes against carrying out the teaching work (Liao, 2013).

MATERIALS AND METHODS

Constructing the teaching material contents of project-based integration of theory and practice: It researches the project-based integration of theory and practice of teaching materials contents which disregards the simple theoretical interpretation and the simple practical operation and takes the actual design project as the teaching source material. In the teaching material, the real design project from industry is set up and the fictitious and idealized design subject is discarded. And in the teaching material, the detailed introduction is made to form the coherent vein to guide teachers to complete the project introduction first and then make task analysis, after that explain the theoretical knowledge and then set an example, when teaching according to the teaching material and finally the students do the actual operation, as shown in Fig. 1. In this process, the theoretical knowledge needed for vocational ability is integrated into all stages of teaching (Li, 2016).

The combination of project-based integration of theory and practice and the construction of teaching material could stimulate students' learning motivation and could cultivate students to apply theory to practice, teamwork and comprehensive ability to analyze and solve problems. The teaching material contents of project-based integration of theory and practice could put students in real design projects and in the process of implementing tasks could make theoretical study and practical operation simultaneously, which not only shortens the distance between the students and the specific work positions, but also cultivates the students' ability of sustainable development, so as to realize the goal of comprehensive cultivation.

Task analysis: This link conducts the task analysis, in which it need to clearly explain what kind of packaging students should make, making the gift packaging, the combined packaging, the supporting packaging, or the series packaging. This involves four concepts, which need to be explained to the students in the next link the theoretical knowledge. With the task to listen to the theoretical knowledge would make students listen actively and carefully and grasp attentively. Because these concepts could not be understood, it is impossible to accomplish this task.

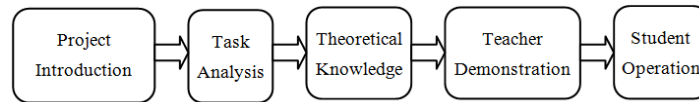


Fig. 1: Implementation of project-based integration of theory and practice

Table 1: Symbol of design drawing of paper packaging

Linetype	Name of linetype	Specification	Use
————	Heavy line	b	Cutting tangent
————	Thin line	1/3 b	Dimension line
-----	Thick dash line	b	Dentate cutting tangent
-----	Thin dash line	1/3 b	Line of impression of inside folding
-----	Chain line	1/3 b	Line of impression of outside folding
~~~~~	Broken line	1/3 b	Boundary line of point of fracture
///////	Shadow line	1/3 b	Gumming area scope
↔ ↑	Symbol of direction	1/3 b	Paper grain trend

Table 2: Mark of size of design drawing of paper packaging

Direction	Inside dimension	Outside dimension
Length	$L_i$	$L_o$
Width	$W_i$	$W_o$
Height	$H_i$	$H_o$

Inside dimension:  $X_i = L_i \times W_i \times H_i$ ; Outside dimension:  $X_o = L_o \times W_o \times H_o$

**Theoretical knowledge:** Firstly, the main knowledge points involved in the task analysis are introduced, including the gift packaging, the combined packaging, the supporting packaging and the series packaging; Secondly, the first step of carrying out the task and the knowledge points involved in this step are explained; Thirdly, it is the link of teacher demonstration; Finally, it is the link of student operation. After this step is completed, when conducting the next step, it is still to repeat this process.

**Teacher demonstration:** The teacher demonstrates the process and explains the involved knowledge points. For example, when demonstrating the design drawing of paper packaging, it is necessary to explain clearly the symbols of design drawing and the mark of size of design drawing of paper packaging (as shown in Table 1 and 2) and actually draw it. After that, a large number of drawing examples should be shown to students.

**Student operation:** Under the guidance of teacher, the students carry out the actual packaging design and making according to the task.

The student operation could best reflect the teaching material contents of project-based integration of theory and practice. In the process of designing and making, the color, character, graphic and layout arrangement of packaging and the design of the overall modeling require students to study and analyze the

theoretical knowledge while carrying out the specific making, “doing in learning and learning in doing” throughout the whole process, reflecting the teaching material characteristic of project driving and integration of theory and practice.

**Adopting the organization form of teaching material of circumference type:** Adopting the organization form of teaching material of circumference type, aiming at the characteristics of discipline and the ability level and cognitive features of higher vocational students, the basic core concept is first presented and then the breadth of the teaching material is gradually expanded around the core concept. In this way the knowledge is gradually expanded and students are not easily bored.

**Adopting the layout form in which the picture and its accompanying essay are both excellent:** What is called a good picture is worth thousand words. The picture and table contain much more information than the same length of words. In particular, a beautifully printed color picture would impress the reader. Using picture to express the content and abstract concept what are difficult to understand or need to emphasize enables students to deepen their understanding and memory with the help of a brief description of words (Tang, 2005).

In the existing teaching material of packaging design, the words cover most of the space and the picture is not enough, so that students are easily tired. It should add picture to teaching material for it and the word in each page should not exceed one-half of the layout and the form should be lively, so that students could study easily and happily.

**Adopting the loose-leaf binding form:** Service cycle of the existing teaching material of packaging design is long, usually taking several years and the content is static, so it is not easy to adjust content at any time according to the situation change of teaching.

In this way, it could adopt the loose-leaf binding form so as to revise and adjust continuously, adding new content, making the content of teaching material be dynamic and keeping pace with the times.

## RESULTS AND DISCUSSION

**Realizing the breakthrough of teaching what is needed:** The teaching material of project-based integration of theory and practice could well get rid of the well-rounded limitations of the existing

teaching material, realizing the breakthrough of teaching what is needed and without any surplus (Tang, 2005). The existing teaching material of packaging design of which the knowledge system is complete, the systematicness is strong and the content coverage is wide, mainly considers the integrity of packaging design knowledge, which is not consistent with the application characteristics of higher vocational education and is not conducive to the cultivation of students' practical ability.

In this regard, integrating the project-based integration of theory and practice into teaching material, it entirely could construct the teaching material without complete knowledge system, scattering the knowledge points and teaching what is needed.

**Real embodiment of teaching and learning:** The teaching material of project-based integration of theory and practice could well embody how to teach and learn, avoiding to state and describe the knowledge content, ring by ring. The existing teaching materials of packaging design are mainly designed for teaching, not embodying how to teach and learn, which is suitable for teacher dominant (Tang, 2005).

To this, the teaching material of project-based integration of theory and practice could make students operate actual projects, thus it mobilizes students' participation and puts their heart and soul into them, really constructing student-based teaching material.

## CONCLUSION

Higher vocational students are different from undergraduate students. Their cultural foundation is relatively poor. If the theoretical property and the systematicness of teaching material are stronger, it is not only unfavorable to cultivating them, but also making them feel fear and engendering conflicting emotions. Therefore, the construction of teaching material in higher vocational college must be from the present condition of higher vocational education, based on the nature of higher vocational education.

Especially for the course of packaging design that has strong applicability itself, it should make its teaching material highlight the applicability. Therefore, it is extremely necessary to construct a characteristic teaching material of project-based integration of theory and practice of packaging design in higher vocational college. Because it not only could put the practical application of packaging design in the first place, but also could well combine the theory knowledge of packaging design with the practical application. And through the driving of project, it could let students see that the packaging design is useful and could stimulate their interest, which is conducive to the

development of teaching work. And then it could efficiently improve the students' qualities and skills and better service for the society, so as to meet the requirement of cultivating talents in higher vocational colleges, to show characteristic of higher vocational education.

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## CONFLICT OF INTEREST

We declare that we do not have any commercial or associative interest that represents a conflict of interest in connection with the work submitted.

## REFERENCES

- Jiang, X., 2014. Research on building a practice platform for innovation and entrepreneurship in mechanical industrial design. *Res. J. Appl. Sci., Eng. Technol.*, 7(2): 343-347.
- Jiang, X. and W. Liu, 2016. Research on strategies for cultivating innovation and entrepreneurship talents in colleges and universities. *Curr. Res. J. Soc. Sci.*, 8(4): 39-45.
- Jiang, X. and Y. Song, 2015. Research on platform construction of manufacturing practice for industrial design specialty in colleges. *Curr. Res. J. Soc. Sci.*, 7(1): 11-15.
- Jiang, X. and Y. Sun, 2015. Study on constructing an education platform for innovation and entrepreneurship of university student. *Res. J. Appl. Sci., Eng. Technol.*, 9(10): 824-829.
- Li, D., H. Bi, W. Sun, D. Chen and F. Liu, 2015. Study on the construction of mathematical modeling textbooks. *J. Sci. Teach. College Univ.*, 35(11): 67-69.
- Li, J., 2016. The study of the application of the project theory and practice integration teaching method. *J. Liaoning Higher Vocat.*, 18(1): 39-41.
- Liao, Y., 2013. Analysis on the textbook construction of the history of Chinese design for the major of vocational art design. Hunan Normal University, Changsha.
- Liu, J. and H. Zhong, 2011. Packaging Design and Printing Process. Northeast Normal University Press, Changchun.

- Ouyang, C. and Q. Ouyang, 2014. Practice Course of Packaging Design. Peking University Press, Beijing.
- Tang, L., 2005. Research on teaching materials construction of advanced mathematics at higher vocational mathematics. Hunan Normal University, Changsha.
- Yu, X., 2012. Packaging Design. Peking University Press, Beijing.