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*Research Article*

# Optimization Effectiveness Model of Graphic Design Curriculum System Based on New Media\*

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## Abstract

Currently, new media has been applied to the setting and optimization of higher education curriculums. However, whether the optimization of the curriculum system based on the new media has achieved the expected results remains to be further studied. This paper takes the graphic design curriculum as the starting point and studies the optimization effectiveness model of the curriculum system after the introduction of new media. This paper first analyzes the connotation of new media and its application in some curriculums; then, it analyzes the differences between the graphic design curriculum system before and after the introduction of new media; finally, this paper proposes the optimization effectiveness model of the curriculum system and on the basis of this model, studies the optimization effect of the graphic design curriculum system based on new media. The research results in this paper can be used to guide the setting of graphic design curriculums in the context of new media and also provide a reference for the effectiveness modeling of the optimization of the curriculum system for other curriculums after the introduction of new media.

## Keywords

New Media • Graphic Design Curriculum • Curriculum System Optimization • Effectiveness Model

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In order to test whether the optimization effect of the curriculum system has achieved the desired effect after introducing the new media into the graphic design curriculum teaching, this paper proposes a new optimization effectiveness model of graphic design curriculum system based on the new media.

Predecessors have conducted some researches in the aspects of new media, graphic design curriculum teaching and curriculum teaching effectiveness model. Some researchers focus on the promotion role of the new media in the design field and study a series of subversive changes in the design field after the introduction of new media (Davison, 2010). Some researchers focus on various influences of the introduction of new media on the original graphic design curriculum teaching and compares the positive and negative effects of the new media in the construction of this curriculum system (Abushawali, Lim & Bedu, 2014). Some researchers have conducted researches on the teaching of graphic design curriculums and given a series of theoretical achievements guiding the teaching practice of graphic design curriculums, such as studying the interaction between belief and learning (Bower, 2010) and the guarantee role of art teaching and graphic design teaching in the overall teaching effect of the curriculum (Vacharopoulou, Penfold, Cordell, Macdonald & Mather-Lees, 2009). Some researchers conduct researches on the curriculum teaching effectiveness model and propose a series of modeling methods for the evaluation of the teaching effectiveness. There are different applicable modeling methods for the evaluation of teaching effectiveness in different disciplines. However, in general, the curriculum system effectiveness model based on student ability cultivation and the curriculum system effectiveness model based on matrix management have better performance (Meskill & Anthony, 2014; Hasebrook & Maurer, 2014). Although the predecessors have done a lot of useful basic work in many aspects, the modeling of the teaching effect of the graphic design curriculum, especially the optimization effectiveness modeling of graphic design curriculum system in the context of new media is rarely covered.

In order to fill the research gaps of predecessors, this paper puts forward a new media-based optimization effectiveness modelling of graphic design curriculum system based on the in-depth analysis of new media connotation and graphic design curriculum system. Further empirical research has shown that the proposed model can effectively evaluate the optimization effect of the graphic design curriculum system in the context of new media.

The first part of this paper is the introduction; the second part introduces the connotation of new media and the impact of new media on higher education; the third part analyzes the differences in the construction of graphic design curriculum system before and after the introduction of new media; the fourth part studies the optimization effectiveness model of graphic design curriculum system based on new media; and the fifth part is the conclusion.

## **Connotation of New Media and Its Impact on Higher Education**

### **Connotation of New Media**

In the 1960s, American media researchers proposed the concept of "new media." At the time, "new media" mainly referred to radio and television based on electronic technology and communication technology

compared to traditional paper media. However, with the rapid development of computing technology, network technology and mobile communication technology, the connotation of "new media" is also growing and changing. The term "new media" is now referring to all digital-based media, such as the Internet, smart terminals, digital broadcasting and television (Stewart, 2015). In addition, unlike the one-way communication mode of traditional media, new media often has two-way communication mode, exponential communication mode and complex social network communication mode. The dissemination of information is more rapid and complex and the parties involved in the dissemination of information are more independent and interactive.

### **Impact of New Media on Higher Education**

The new media has a huge impact on all aspects of society. Due to the importance and particularity of higher education, the promotion role of new media in higher education has always been the focus of researchers. The introduction of new media has changed the form of classroom teaching, broadened the way of knowledge acquisition, extended the breadth of knowledge dissemination and provided autonomous learning space for college students. However, under the premise that the traditional teaching of higher education and its effect evaluation system are relatively mature, how to achieve the organic integration of the new media with the traditional higher education to promote the original higher education, while avoiding the "fragmentation" and "superficialization" of knowledge after the introduction of new media is the key link for the successful introduction of new media into higher education. In the research and practice of predecessors, new media has been introduced into the teaching of higher education such as advertising design, art design, public opinion analysis and physical education, achieving good effect (Gadanidis & Namukasa, 2013). Follow-up studies have shown that the successful introduction of new media into teaching can help college students further consolidate the theoretical foundation, improve the practice level and then comprehensively improve their professional ability. At the same time, it can also cultivate the autonomous learning ability of college students, which is conducive to their active learning ability of knowledge and lifelong learning ability after entering the society.

## **Analysis of the Impact of New Media on Graphic Design Curriculum System**

### **Establishment of Graphic Design Curriculum System before the Introduction of New Media**

The graphic design curriculum system before the introduction of new media is simply a framework structure that is mainly based on aesthetic education with computer-aided design education. The graphic design curriculums generally include art foundation, color management, plane composition, logo design, layout design, text design, computer science foundation, photoshop, 3D MAX and Auto CAD (Mendoza, Bernasconi & Macdonald, 2010). The graphic design curriculum has higher requirements for students' aesthetic quality, performance tension, technical level and innovation ability. Also, it also puts forward higher requirements for teachers' knowledge reserve and teaching level. In the graphic design curriculum before the introduction of new media, the teaching content and teaching method are traditional both for the compulsory content and the elective content, emphasizing the teacher-centered basic theory education, ignoring the individualized differences among students and limiting the development of students' autonomous learning ability. It is undeniable that the

teacher-centered graphic design curriculum system has indeed promoted the teaching of graphic design curriculums in a certain period. However, with the continuous advancement of the times and the development of market demand, the inadequacy of traditional graphic design curriculum system has gradually emerged and reform and innovation are urgently needed.

### **Establishment of Graphic Design Curriculum System after the Introduction of New Media**

The priority of the graphic design curriculum system after the introduction of new media is the emphasis on the basic knowledge and the improvement of teaching effect while the focus on new media and the enhancement of students' autonomy are also valued. Specifically, the graphic design curriculum system is reclassified into three component modules: basic theory module, capability improvement module and social practice module. The goal of the basic theory module is to help students build a solid and sound basic knowledge system; the goal of the capacity improvement module is to help students to fully exert their subjective initiative and turn book knowledge into their own abilities; the goal of the social practice module is to help students develop social practice and form a feedback loop of social needs, guiding knowledge building and capacity cultivation (McNamara, 2015). These three modules complement each other and the new media is introduced in each module to help achieve the teaching objective. For example, through social platforms such as QQ and WeChat, students can exchange their thoughts and discuss with each other so that they can have deeper understanding of what they have learnt. Also, it is possible for them to do social practice through multiple channels. Another example is that through social platforms such as Zhihu and Weibo, students can quickly and accurately understand the real needs of society, which is conducive to the forward-looking of knowledge learning and the pertinence of ability enhancement.

### **Analysis of the Differences in Graphic Design Curriculum System before and after the Introduction of New Media**

In the context of new media, the construction of graphic design curriculum system is shifted from teacher-centered to student-centered. The curriculum content is more reasonable; the curriculum teaching method is more flexible; and it is easier to test the curriculum teaching effect. After re-combing and dividing, the level of the graphic design curriculum system is clearer after the introduction of new media. The goals at all levels are clearer and the role of teachers in each level is more accurate, leaving broader space for students to grow autonomously. In general, if the interaction and convenience of the new media can be fully utilized, it is conducive to the optimization of the graphic design curriculum system, thus benefiting both teachers and students.

## **Analysis of the Effectiveness of the Graphic Design Curriculum System Based on New Media**

### **Effectiveness Modeling of General Curriculum System**

Predecessors have proposed a variety of models in the study of the effectiveness of the curriculum system. Among them, the curriculum system effectiveness model based on student ability cultivation and the curriculum system effectiveness model based on matrix management have better performance are more accurate (Meskill

et al., 2014; Hasebrook et al., 2014). The curriculum system effectiveness model based on student ability cultivation is shown in Figure 1.

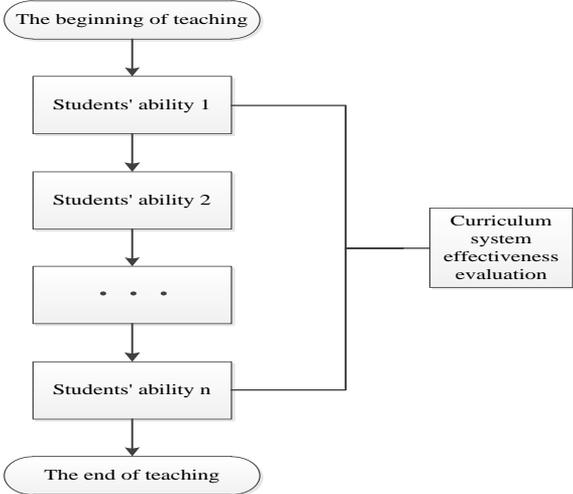


Figure 1. Curriculum system effectiveness model based on students' ability cultivation.

It can be seen from Fig. 1 that during the teaching process, the teaching objective is to cultivate n kinds of abilities of students and students' acquisition of these abilities is regarded as the evaluation standard of the effectiveness of the curriculum system. The advantage of this model is that it can be highly compatible with the syllabus and the disadvantage is that access of the assessment ability is too singular and the social recognition of effectiveness evaluation is relatively low. The effectiveness model of the curriculum system based on matrix management is shown in Figure 2.

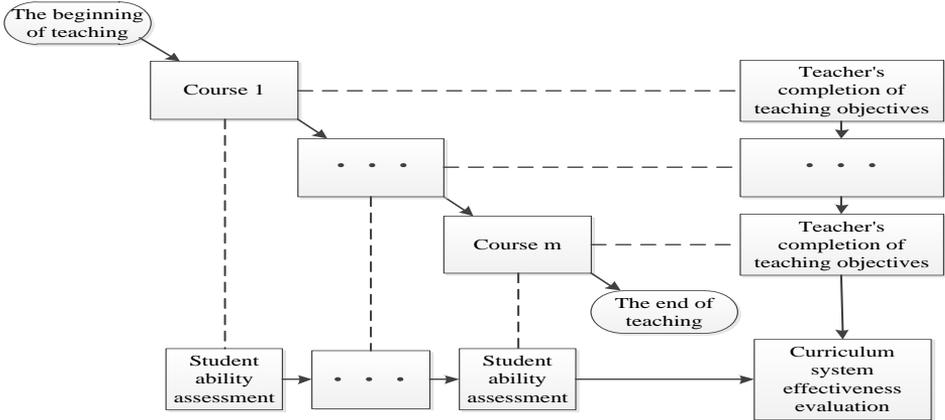


Figure 2. Curriculum system effectiveness model based on matrix management.

It can be seen from Fig. 2 that during the teaching process, the matrix management of m curriculums is performed. For each curriculum, after the end of the teaching, on the one hand, the improvement of students'

ability is evaluated through the test and other methods; on the other hand, teachers' evaluation of the achievement of teaching objectives is collected through the questionnaire and other means. After the end of all curriculums, the improvement of students' ability and teachers' evaluation of the achievement of teaching objectives are integrated, obtaining the final curriculum system effectiveness evaluation. The advantage of this model is that it evaluates the effectiveness of the curriculum from two dimensions and the disadvantage is the lack of feedback links and process management, so there is room for further improvement of the teaching effect.

### Effectiveness Modelling of the Optimization of Graphic Design Curriculum System

According to the characteristics of the graphic design curriculum, combined with the advantages of the two curriculum system effectiveness models introduced in Section 4.1, this paper proposes an effectiveness model of the curriculum system based on the multi-dimensional integration of satisfaction to start the modeling of the effectiveness of the graphic design curriculum system. The effectiveness model of the curriculum system based on the multi-dimensional satisfaction of satisfaction is shown in Figure 3.

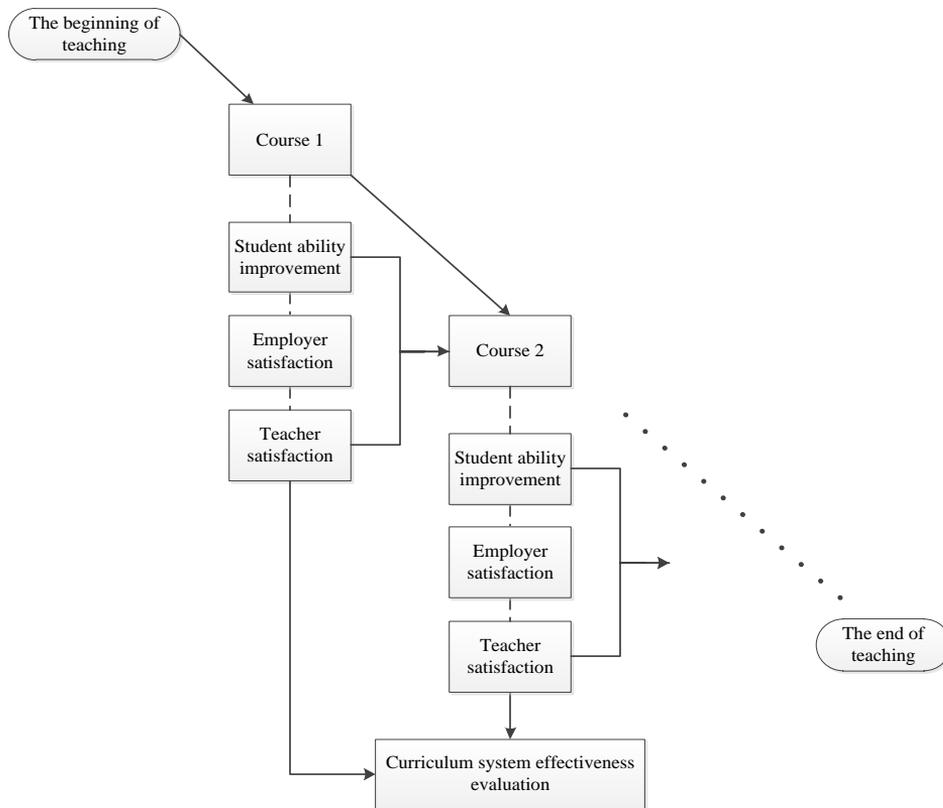


Figure 3. Curriculum system effectiveness model based on multidimensional satisfaction fusion.

It can be seen from Fig. 3 that during the teaching process, several curriculums are sequentially taught. After the completion of the teaching of curriculum 1, the improvement of the ability of students, the satisfaction of the social practice of students and the teacher's satisfaction with the teaching effect after the teaching interaction will be used as the reference information before the start of the teaching of curriculum 2. After the completion of the teaching of curriculum 2, the improvement of the ability of students, the satisfaction of the social practice of students and the teacher's satisfaction with the teaching effect after the teaching interaction will be used as the reference information before the start of the teaching of curriculum 3. As an analogy, the satisfaction of the previous curriculum from each party can be used as a teaching reference before the start of teaching. Correspondingly, the teaching should be increased or decreased and the teaching method should be altered. Even the teaching curriculum can be increased or decreased accordingly, so that the overall teaching process is gradually optimized to ensure the ultimate teaching effectiveness of the graphic design curriculum system.

### Optimization of Graphic Design Curriculum System in the Context of New Media

Through questionnaire method, this paper takes the graphic design curriculum in a certain university as an example and teachers, college students and employers as the survey objects to compare the differences of teaching effect before and after the introduction of new media. The satisfaction of all parties before and after the introduction of new media is shown in Table 1.

Table 1

*Comparison of Satisfaction before and after the Introduction of New Media*

Number	Research object	Satisfaction before the introduction of new media (%)	Satisfaction after the introduction of new media (%)
1	Teacher	77	87
2	College students	76	94
3	Employer	63	92

It can be seen from Table 1 that after the introduction of new media, the satisfaction of all parties has been greatly improved. Among them, the satisfaction of teachers has increased from 77% to 87%, an increase of 10 %; the satisfaction of the college students has increased from 76% before the introduction of new media to 94% after the introduction, an increase of 18 %; as for the main players in the market, the increase of the satisfaction of employers is the most significant, from 63% to 92%, an increase of 29%. The substantial improvement of the satisfaction of employers fully shows that in the context of new media, the optimization of the graphic design curriculum system has been tested by the market and the performance of the optimization of the curriculum system has achieved remarkable results.

### Conclusion

This paper studies the optimization effectiveness model of graphic design curriculum system based on new media. First, this paper analyzes the connotation of new media and the impact of the introduction of new media on higher education. Then, based on the introduction of the construction of graphic design course system before and after the introduction of new media, this paper compares the the development of the graphic design curriculum system. Finally, referring to the previous models of curriculum system effectiveness established by previous researchers, this paper proposes an optimization effectiveness model for the graphic design curriculum

system and conducts the empirical analysis of the optimization effectiveness of the graphic design curriculum system in the context of new media. The research results in this paper give specific suggestions for guiding the teaching of graphic design curriculums in the context of new media and provide certain reference for the effectiveness modeling of the optimization of other curriculums after the introduction of new media.

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