

# Developing Management Guidelines for Enhancing the Skills of Animation Design at Zhejiang Industry Polytechnic College

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## Abstract

The developed management guidelines for enhancing skills of animation design can not only help students better understand their career development direction and learn the required skills and knowledge, but also help enterprises or schools to effectively train talents and provide a clear development path and plan for schools. The objectives of this research were: 1) to investigate problems and needs of students, teachers, administrators, and employers for enhancing the skills of animation design, and 2) to develop management guidelines for enhancing the skills of animation design. The respondents were divided into 3 groups; namely; 1) 301 students, 2) 76 teachers and administrators, and 3) 36 employers; and selected by stratified random sampling technique. The research used the survey method to obtain sample data by constructing questionnaires, interviews, and focus groups. The statistics used in this study were frequency, mean, and standard deviation. The findings indicated that: 1) Problems of enhancing the skills of animation design in the opinions of students and employers were at the highest level, whereas teachers and administrators viewed it at a high level. 2) Needs of management guidelines for enhancing skills of animation design in the opinions of students, teachers, administrators, and employers were all at the highest level. 3) Management Guidelines for enhancing the skills of animation design were composed of 7 units, including 1) administrator and the role for supporting teaching animation design, 2) guidelines for teachers of animation design, 3) professional planning in

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animation design, 4) professional skills in animation design, 5) resources for designing animation, 6) the assessment to determine the students' skills in animation design, and 7) implementation of animation design. All 7 units were evaluated for correctness and suitability by the 3 specialists and possessed IOC values from 0.67 to 1.00.

**Keywords:** Management guidelines; Skills of animation design

## Introduction

In the information age, people's lives, education and entertainment have changed dramatically. Animation design as a skill for art students has also been constantly improving its technical content due to the application of information technology and high technology. Animation design has become one of the important contents of social civilization (Tian, 2021, pp. 45-48), and plays an important role in the education sector.

As a vigorous sunrise industry, there is a large demand for professional and technical talents in the field of animation design, which also gives birth to the development of animation design education in higher vocational colleges. More animation-related institutions have been established with the hope of cultivating relevant talents in the field of animation design (Wu & Tu, 2023, pp. 1571-1593). In addition to factors such as hardware and software facilities, funding, and teachers and administrators, to cultivate talent for animation design, a method for guiding animation design novices to becoming experts is also playing an important factor. The study of animation design is an emerging field and has its particularities. Therefore, a specially tailored teaching mode is needed to enable teachers and administrators to guide learners to learn the knowledge of animation design in the most efficient way and skills (Worasamutprakarn, 2021, pp. 49-52).

Animation design is an emerging field of study, coupled with the uniqueness of the animation itself, and thus to teach the design of animation design, it is necessary to have a suitable teaching design mode to guide the teaching and learning and to maximize the learning effectiveness (Prater & Mazur, 2014, pp. 1-5). The educational goal of animation art design is to cultivate high-quality professional and technical talents. In the process of higher vocational education, these talents need to have good art skills and be able to support their participation in such fields as animation advertising, film and television titles, and so on Web design (Tian, 2021, pp. 45-48).

However, in practice, the concept of animation design education in China's higher vocational colleges is still relatively backward, the training goal is not clear, and the teaching content is divorced from the talent demand of the animation design market, which has become an important factor restricting the cultivation of animation

design talents in colleges and universities. In the study of animation design learning, most of the focus is on the use of designed animation products to conduct teaching experiments for learners (Hagler et al., 2018, pp. 1-4; Nop et al., 2019, pp. 54-59). McMenemy and Ferguson (2009, pp. 164-174) found that animation can improve the learning effectiveness of reading comprehension. Woo (2014, pp. 291-307) indicated that compared with traditional teaching methods, learners have a higher learning motivation with animation and game-style learning. However, there have been few studies on how to explore the perspective of teaching design and lead learners to make animation designs (Wu & Tu, 2023, pp. 1571-1593).

At present, the animation design major of Zhejiang Industry Polytechnic College has made some achievements in teaching, but there are some drawbacks. First, in the course setting, the animation design major should pay attention to cultivating students' innovative consciousness and practical operation ability. Through various forms of course arrangement and project practice, students can fully master the skills and knowledge required for animation production and can smoothly adapt to the needs of society after graduation. In addition, in terms of facilities and equipment, schools also need to invest a lot of money to update and improve related equipment and facilities to meet the requirements of talent training in the constantly developing and changing industry.

Therefore, the animation design major of Zhejiang Industry Polytechnic College needs a management guideline to guide administrators and teachers in teaching work. It is believed that with the passage of time and the implementation of various measures, the animation design major will usher in better development.

### **Research Objective**

1. To investigate the problems and needs of students, teachers, administrators, and employers for enhancing the skills of animation design.
2. To develop management guidelines for enhancing the skills of animation design.

## Research Methodology

### 1. Population and Sample groups

This study was conducted at Zhejiang Industry Polytechnic College. The population in this research project was divided into 3 groups; namely, 1) 1216 students; 2) 94 teachers and administrators participated in the teaching, and 3) 40 companies provided technical support for the animation design teaching.

The sample groups in this study were derived from the Yamane formula, and obtained through a stratified random sampling technique. They were divided into 3 groups; namely, 1) 301 students; 2) 76 teachers and administrators, and 3) 36 employers.

### 2. Research Instruments

In this research project, a questionnaire was employed for the data collection. The questionnaire was divided into 3 sets; namely, 1) the students set, 2) the teachers and administrators set and 3) the employers set. The questionnaire was divided into 2 parts, 1) general information, and 2) problems and needs for enhancing the skills of animation design.

For this part, the questionnaire was evaluated for the Index of item-objective Congruence scores (IOC scores) by the three specialists. Each question in the questionnaire was evaluated with the range of IOC 0.67 to 1.00. The reliability of the questionnaires for students, teachers and administrators, and employers were 0.861, 0.942, and 0.832, respectively.

A focus group for this discussion meeting: The three specialists were invited to share ideas, and experiences, and evaluate the management guidelines for enhancing the skills of animation design. The results were presented in terms of IOC (Index of item-objective congruence) with the range of 0.67-1.00.

### 3. Data Collection

The researchers submitted letters of permission to the school director in advance to ask permission to collect the data and information from the sample groups at Zhejiang Industry Polytechnic College. The researchers made an appointment with the sample groups and informed them of the purposes of the data collection.

The companies in this research were the companies that accept college students for internships and work. Therefore the researchers could directly contact and send the questionnaires to them.

#### 4. Data Analysis

The Data and information collected were analyzed, interpreted, and then presented in terms of frequency count, percentage, mean ( $\bar{X}$ ), and standard deviation (S.D.). The five-point Likert rating scale was used to evaluate the respondents' problems and needs for enhancing the skills in animation design.

The criteria and defined in the range of the mean scores as follows:

4.51-5.00 = the highest level of problems and needs

3.51-4.50 = the high level of problems and needs

2.51-3.50 = the moderate level of problems and needs

1.51-2.50 = the low level of problems and needs

1.00-1.50 = the lowest level of problems and needs

### Summary of the Research Results and Discussion

#### Summary of the Research Results

1. Problems and needs of enhancing the skills of animation design for students in Zhejiang Industry Polytechnic College

**Table 1** Problems and needs of enhancing the skills of animation design for students in Zhejiang Industry Polytechnic College in the opinions of students

Items	Problems			Needs		
	$\bar{X}$	S.D.	Level of Problem	$\bar{X}$	S.D.	Level of need
Planning	4.54	0.60	Highest	4.54	0.58	Highest
Skills for Animation Design	4.55	0.60	Highest	4.50	0.60	Highest
Resources	4.52	0.58	Highest	4.52	0.59	Highest
Evaluation	4.52	0.59	Highest	4.52	0.59	Highest
Total	4.53	0.59	Highest	4.52	0.59	Highest

Table 1 shows that problems and needs of enhancing the skills of animation design for students in the opinions of students are at the highest level ( $\bar{X} = 4.53$ , S.D. = 0.59;  $\bar{X} = 4.52$ , S.D. = 0.59). Most students mentioned that the problems and needs for enhancing skills of animation design in terms of planning, skills for animation design, resources, and evaluation are at the highest level.

**Table 2** Problems and needs of enhancing the skills of animation design for students in Zhejiang Industry Polytechnic College in the opinions of teachers and administrators

Items	Problems			Needs		
	$\bar{X}$	S.D.	Level of Problem	$\bar{X}$	S.D.	Level of need
Planning	4.52	0.60	Highest	4.48	0.59	High
Skills for Animation Design	4.48	0.58	High	4.49	0.59	High
Resources	4.51	0.57	Highest	4.49	0.62	High
Evaluation	4.46	0.59	High	4.56	0.57	Highest
Total	4.49	0.59	High	4.50	0.59	Highest

Table 2 shows that problems of enhancing the skills of animation design for students in the opinions of teachers and administrators are at a high level ( $\bar{X} = 4.49$ , S.D.=0.59), and the needs for enhancing the skills of animation design are at the highest level ( $\bar{X} = 4.50$ , S.D. = 0.59). Problems of planning and resources are at the highest level. ( $\bar{X} = 4.52$ , S.D. = 0.60;  $\bar{X} = 4.51$ , S.D. = 0.57). Problems of skills for animation design and evaluation are at a high level. ( $\bar{X} = 4.48$ , S.D.=0.58;  $\bar{X} = 4.46$ , S.D. = 0.59).

Needs of management guidelines for enhancing skills of animation design for students in teachers'/administrators' opinions. ( $\bar{X} = 4.50$ , S.D. = 0.59). Needs for planning, skills for animation design, and resources in the opinions of teachers and administrators are at a high level. ( $\bar{X} = 4.48$ , S.D.=0.59;  $\bar{X} = 4.49$ , S.D.=0.59; and  $\bar{X} = 4.49$ , S.D. = 0.62, respectively). The needs of evaluation for students in the opinions of teachers and administrators are at the highest level. ( $\bar{X} = 4.56$ , S.D. = 0.57).

**Table 3** Problems and needs of enhancing the skills of animation design for students at Zhejiang Industry Polytechnic College in the opinions of employers

Items	Problems			Needs		
	$\bar{X}$	S.D.	Level of Problem	$\bar{X}$	S.D.	Level of need
Planning	4.62	0.56	Highest	4.59	0.58	Highest
Skills for Animation Design	4.52	0.61	Highest	4.57	0.61	Highest
Resources	4.56	0.60	Highest	4.59	0.56	Highest
Evaluation	4.64	0.51	Highest	4.57	0.55	Highest
Total	4.58	0.57	Highest	4.58	0.58	Highest

Table 3 shows that problems and needs of enhancing the skills of animation design for students in the opinions of employers are at the highest level. ( $\bar{X} = 4.58$ , S.D. = 0.57;  $\bar{X} = 4.58$ , S.D. = 0.58). Problems and needs in terms of planning, skills for animation design, resources, and evaluation in the opinions of employers are at the highest level.

## Discussion

1. The Investigation of problems of enhancing the skills of animation design for students in Zhejiang Industry Polytechnic College

According to the results of this study, the surveys of students, teachers, administrators, and employers from cooperative enterprises show that the skill enhancement problems of animation design students are at the “highest” level, which indicates the prevalence and seriousness of the skill enhancement problems of animation design students.

1) In terms of planning, it was found that the students did not plan their future careers in animation design, did not plan to learn the animation design process, lacked the ability of self-learning, and did not know how to improve their animation design ability. These findings conform to Luo (2012, pp. 152-153) that the performance of students recruited by higher vocational colleges and universities is lower than that of similar public colleges and universities, and students generally have a weak foundation and little initiative in learning. For subjects that are more difficult or less interesting, they do not want to spend time studying. Most of the time is spent playing games, surfing the Internet, or doing other recreational activities. The homework assigned by the teacher is usually not completed or completed in a coping manner. What’s more, he often misses classes, and the teacher can’t see him several times a semester.

2) In terms of animation design skills, it was found that students have different degrees of problems in artistic aesthetics, original drawing design, 3D modeling, animation laws, and so on. Due to the relatively short time for universities to set up animation majors, the number of animation teachers with sufficient professional reserves is insufficient, and the teaching is still in a state of shortage of animation teachers. In recent years, many of the animation teachers in colleges and universi-

ties are graduates of animation majors. These teachers have a high level of theoretical knowledge of the animation specialty, but their production practice ability is weak, which brings great constraints to the cultivation of students' animation professional practice ability (Gubo, 2019, p.2). Moreover, Yuhong (2007, p. 82-83) stated that most of the teachers in charge of teaching are original teachers engaged in painting or design. Most of them have not received systematic professional education in animation, and their professional level is generally not high. On the other hand, most professional teachers have no experience in animation production and only teach according to the content of textbooks. Animation teachers in local universities have few opportunities to participate in professional exchanges and lack a grasp of the dynamics of the animation industry.

3) In terms of resource management, the survey analyzed the utilization of existing resources by students. It was found that students were less aware of the animation rules and software resources involved in the process of learning animation design, online tutorials, and library books, the latest production processes in the industry, and the first-line companies involved in the practice. According to Luo (2012, pp. 152-153), the results might come from the higher vocational colleges and universities having financial difficulties and backward hardware and software equipment. They lack standard laboratories for animation majors including audio and video laboratories, non-linear editing laboratories, and motion capture laboratories and so on. The equipment required for these labs is high-end computer equipment and various animation production software, which are quite expensive. For private universities with no government financial support or poor student resources, it is very difficult to build these laboratories to study.

4) In terms of evaluation, it was found that the criteria for evaluating the animation design work for animation design majors are unclear and students don't know the way to improve their work as the college's criteria required. For these problems, it might be the standards of colleges' evaluation are not clear and teachers are not clear about evaluation standards. Zhang (2014, pp. 255-256) mentioned that professional courses generally have examinations. The examination courses are generally completed by way of practice, and in the form of theoretical paper

exams and creative assignments. The theory paper exam is further divided into objective and subjective questions. All grades are assigned by the teachers. Students' mastery and application of knowledge cannot be adequately assessed. Teacher evaluation is also subjective and one-sided.

## 2. The Investigation of the needs of management guidelines for enhancing skills of animation design for students in Zhejiang Industry Polytechnic College

According to the results of this study, it can be concluded that most animation design students, teachers, administrators and employers evaluated the needs for management guidelines for enhancing animation design skills at the "highest" level. Therefore, training college students with career planning, independent learning, innovation ability, and excellent professional technology has become the primary topic of professional teaching in higher vocational colleges.

Besides, the cultivation of applied talents in animation, the system structure and teaching content of animation courses are optimized comprehensively and systematically, and the syllabus of animation professional courses is constantly revised and improved according to the status quo of the original market and the shortage of middle and high-end talents. It tends to cultivate animation first-line talents and middle and high-end talents, make it conform to the cultivation of national animation innovation consciousness and brand spirit, strengthen the consciousness of "Internet+", and enhance the teaching focus of "Character Shaping and Creative Expression Main courses as the focus of teaching work. Taking the market demand as an opportunity, constantly reforming the teaching mode, adopting multimedia teaching, project training, task-driven, enterprise practice, and other teaching methods, actively participating in the provincial and national animation skill competitions, actively participating in the International Animation Festival, grasping the development trend of international animation and striving to improve the quality of teaching, taking the market demand as the guide and fully reflecting the market demand. The student-oriented teaching mode cultivates excellent middle and high-end animation talents who are hard-working, innovative and have strong practical abilities. (Wang, 2019, pp. 89-91).

Management guidelines for enhancing the skills of animation design in higher vocational colleges

According to the results from this study, management guidelines for enhancing the skills of animation design in higher vocational colleges are composed of seven units; namely: 1) Administrator and the role for supporting teaching animation design 2) Guidelines for teachers of animation design 3) Professional Planning in Animation design 4) Professional skills in Animation design 5) Resources for designing animation 6) The assessment to determine the students' skills in animation design 7) Implementation of animation design. The animation design skills of students majoring in animation design in higher vocational colleges are affected by student planning, resource utilization, teaching, and assessment of student ability. Since most of the animation design students in higher vocational colleges have a low level of animation design skills, the cultivation of animation design skills of students majoring in animation design is very important, and related to the future development of students, and even affects the development trend of the whole society. It is an inevitable trend to strengthen the training of animation design skills. Therefore, it is necessary to formulate relevant guidelines to provide a basis and convenience for the improvement of students' animation design skills and teachers' management.

## Recommendations from Research

### 1. Recommendation for Implementation

From an academic point of view, there are the following aspects to pay attention to:

First, determine the teaching objectives and directions, which can ensure that the teaching management policy is consistent with the educational objectives and concepts of the college.

Second, set clear teaching standards and evaluation systems, the establishment of scientific and reasonable teaching standards and evaluation systems can ensure that students' learning results can be effectively evaluated.

Third, attach importance to teacher training and development, provide professional training and development opportunities for teachers, and improve their teaching level and management ability.

Finally, emphasize student participation and feedback, encourage students to participate in the process of teaching management, collect feedback from students in time, and constantly improve the teaching management policy.

In the implementation of the management policy, we should pay attention to the following points:

First, establish an effective management mechanism, establish a scientific and standardized teaching management mechanism, and clarify the management responsibilities and processes.

Second, strengthen communication and coordination, such as strengthening the communication and coordination between teachers, students, and companies to ensure the smooth implementation of teaching management policies.

Third, pay attention to the reasonable allocation of teaching resources, improve the utilization rate of resources, and provide strong support for teaching management.

Finally, establish an incentive mechanism to encourage teachers and students to actively participate in teaching management and improve the management effect.

## **2. Recommendation for Further Study**

In view of the implementation of the teaching management policy, it is suggested that the academic circles and educational practitioners should strengthen the research on the teaching management policy, in order to provide more theoretical support and practical guidance for the education and teaching management in our country.

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