

# Analysis of Teaching Effect Based on the Test Paper Contents ——Consideration on the Application-oriented Computer

## Drawing Course Reform in Education

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**Abstract.** Based on the training objective of applied talents and the difference between research talents and skilled talents. According to the two test papers contents of computer drawing, the author analyses their characteristics, advantages and disadvantages. This article points out that the test papers are not only to test the students, but also to examine the teachers' teaching concept and their grasp of basic requirements of teaching and training objective. To train applied talents, the author puts forward that computer drawing course should focus on training students actual combat ability of computer drawing, and the relevant departments should promote the related teachers to improve teaching methods by strictly checking on the chain of test paper, ensuring the quality of teaching.

## Introduction

The Ministry of Education emphasizes that independent colleges should establish perfect education management institutions, and constantly improve the quality of education with the methods of enhancing the teamwork construction of teaching management and updating teaching methods based on The Article 35 Measures for the Establishment and Management of Independent Colleges<sup>[1]</sup>. According to Some Opinions about strengthening the teaching work of independent colleges to improve the teaching quality, Jiangsu Province Education Department calls on independent colleges to set up their own college-running feature, improve the talent-fostering quality, and train the high-quality application-oriented persons who adapt to social and economic development needs with innovative spirit and practice ability.”<sup>[2]</sup>

So-called applied talents, compared with research talents and skilled talents, are the people who can turn the scientific principles and knowledge into design scheme or design drawings to provide products and service projects which can meet the demand of social production and civil life on given conditions( Research talents' main responsibilities are exploring and researching the objective law, and then turning these into scientific principles and knowledge, they are the training objectives of research universities; Skilled talents' main responsibilities are using the skills they have mastered to turn the solutions of product and service into the real product and service by using tools and materials, they are also the training objectives of vocational school), they are the objectives that the application-oriented universities ---especially the independent colleges should try hard to develop. In terms of the computer drawing course, students should be trained to use the related software expertly and draw the corresponding professional drawings quickly. For civil engineering majors, Auto CAD, which is as the automatic computer-aided design software developed by Autodesk in 1982, is the most basic and common computer drawing software. Not only has it become widely

popular international drawing tool now, but also commonly used as educational software in the various universities.

The author has compared two test papers recently, which is coming from different teachers who teach the same profession, the same class in the same term, and feels that their concepts of training applied talents are different, so arising some thinking.

## Two test papers

### Test paper 1

Part One. Single Selection Items (2 points per question, total of 30 points)

(1) Command can't call from ( ) of the Auto CAD interface.

A .toolbar    B. command window    C. status bar    D. menu bar

...

Part Two. True or False Items (T or F, 1 points per question, total of 10 points)

(1) A graphic, which is arrayed, can be used as a graphical entity to deal with. ( )

...

Part Three. Multiple Choice Questions (2 points per question, total of 20 points)

(1) The following layer cannot be deleted is ( ).

A .0 layer    B. new layer    C. graphic object layer    D. current layer

...

Part Four. Simulation & Operation (10 points per question, total of 20 points)

(1) A brief description about the main steps of drawing the following graphics, which drawing and editing commands are to be used?

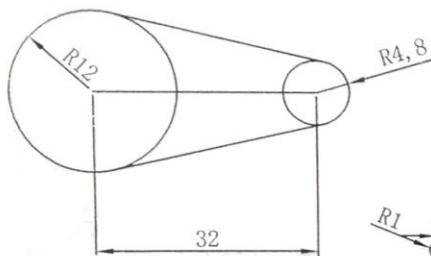


fig 1

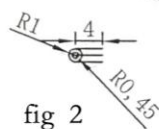


fig 2

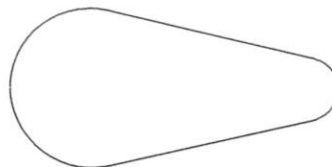


fig 3

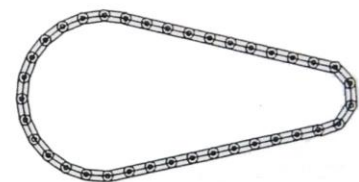


fig 4

A. Drawing a large circle, a small circle and tangents, as shown in figure 1, the drawing and editing commands for drawing have:

B. Drawing a section of chain legend, as shown in figure 2, the drawing commands for drawing have:

C. Modify the graph in figure 1 to the multi-segment line, as show in figure 3, the editing commands for drawing have:

D. The chain legend built for block, the drawing commands for drawing have:

E. The block is inserted into the figure 3, to make the legend spread along the multi-segment line, as show in figure 4, forming the whole graphics, editing commands for drawing have:

(2) According to the graphics movements, fill the command names of each graphic on the line, each site can only fill in one command name (Command name is available Chinese or English), as show in figure 5.

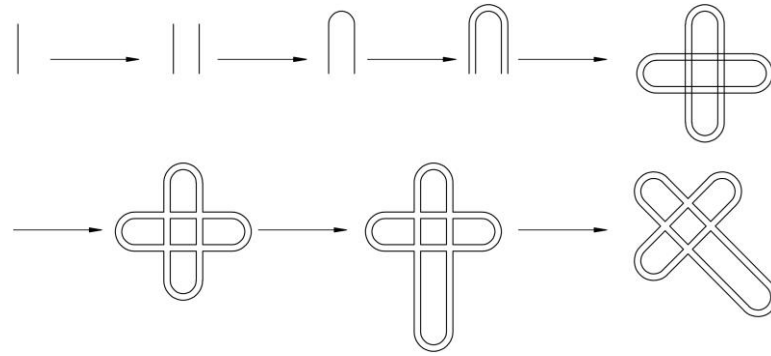


Fig 5

Part Five. Short Answer Questions (10 marks each, total of 20 points)

(1) A brief description about the main methods and steps of drawing the architectural section, which drawing and editing commands are to be used? Give 5-8 examples.

(2) Which steps should be taken to fill pattern? What are the three methods of filling pattern?

### Test paper 2.

Test paper 2 as show in figure 6<sup>[3]</sup>. (Composed of two pages, requirements as the same as before)

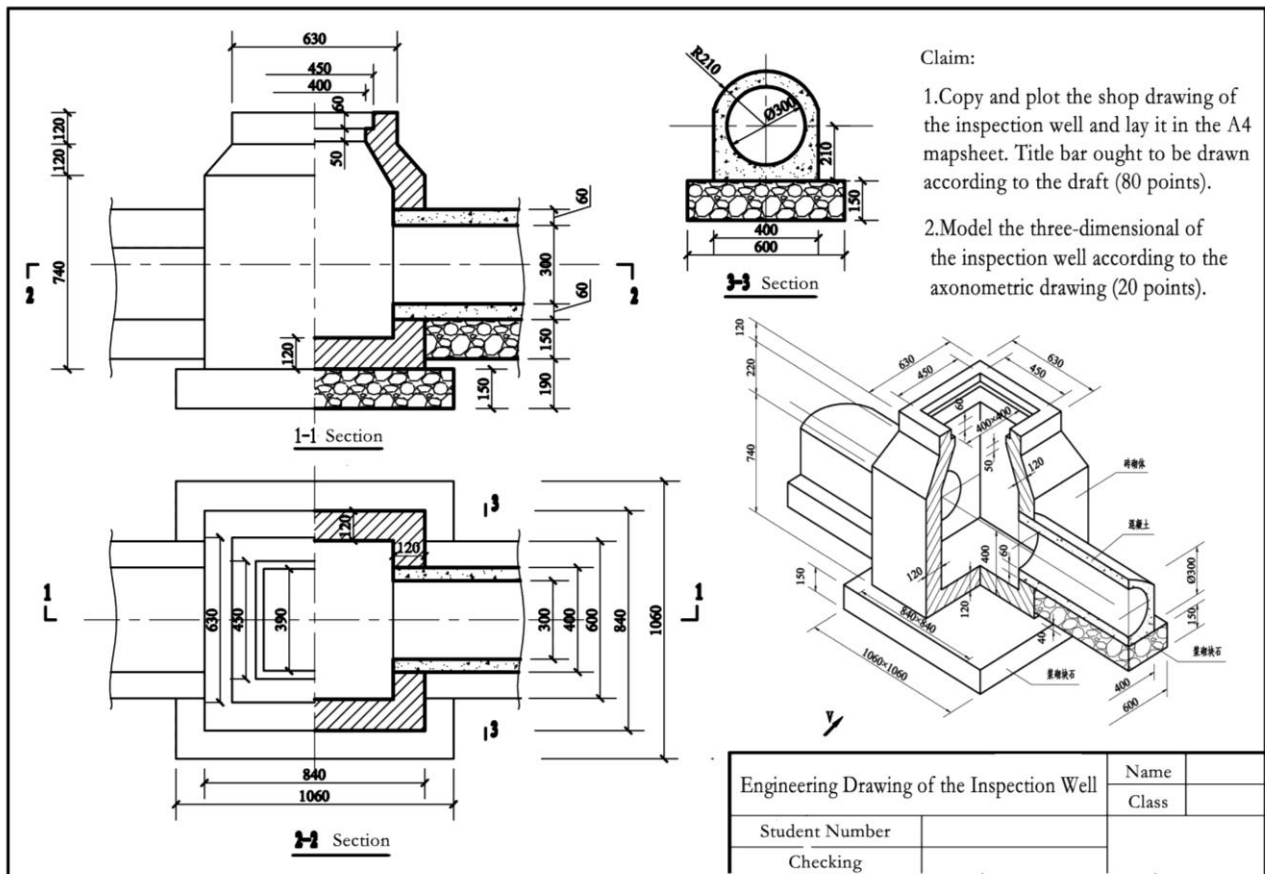


Fig. 6

### Examination Paper Analysis

**Test paper one.** The first three questions of the test paper are about the basic concepts and operation commands (Including the drawing commands and editing commands) of Auto CAD with

a total of 60 points. The contents of them are comprehensive, and there are a lot of English commands. To be honest, as a teacher, the author cannot ensure to get full marks, estimated getting about 90%, so it will be more difficult for students to get good grades. Of course, they might do it well, if the teachers usually pay attention to teaching the commands in English and give a similar review before the exam, while the students are good at English and rote down at the same time. The problem is that even if the students' concepts are pretty good, it is hard to say whether they can skillfully use a variety of commands on computer operation. Some students, author is afraid, are even not to know the place of command tools. In addition, English commands of Auto CAD were produced in a variety of materials a decade ago, when the Chinese localization of software was under not good conditions. And it is unnecessary for unwanted bilingual applied undergraduates to use English commands, because the complete Chinese version of the software can be download in the official website now.

The forth question of the test paper is simulation & operation, A B D of (1) are the basic operation commands of Auto CAD, and easy for students. While C and E, which are rarely used in peacetime, are impossible to solve unless the students do a similar exercise for exams. And the author did not get a smooth effect as figure 4, when he personally operated according to the operation introduction of internet.

The operation of the four (2) is relatively simple, it is not difficult for the most students. The problem is that if you want to draw this graphic, there is a more efficient method: Drawing a rectangle with rounded corners (Fillet radius is set to the half width of the rectangle) – Offset – Array—Prune – Tensile – Rotation.

The five (1) is very flexible, as long as students who have drawn a sectional drawing generally should have no problem, but if let them express in words, the answers might be varied.

The problem of five (2) may be more precise, if it is replaced by what are the three forms of the filling pattern commands. If directly asking the ways of the filling pattern, the author really does not know how to answer.

The test paper one is written examination entirely, and no computer operating, which is purely empty talk. Even the students passed the exam, and got a high score, in fact, the ability of computer drawing is hard to say (The author has given this type of students to retake a test, they said that the previous test did not have computer operating, so they were not skilled in operating). With a lot of English commands, the author is afraid that it is also difficult for the drawing masters who are working in a design institute to get a high score if let them do this test paper. So does the author, even he has 20 years of teaching experience. Then what is the significance of such test paper for the applied students?

**Test paper two.** Compared with the text paper one, text paper two has neither written examination contents nor English commands. Although it is not as comprehensive as text paper one in the aspect of concept, text paper two aims at testing students' ability of actual combat, it's not easy for them to get a high score if there is no a certain amount of practices to increase speed. Paper two not only examines the basic drawing and editing commands, but also involves the auxiliary functions, layer, dimension (especially the global scale in adjustment and the scale factor in the primary unit) and so on. In other words, students cannot do well on this exam if they are not skilled in the basic concepts and operation commands (including the drawing and editing commands) of Auto CAD. Test paper two has particularly put forward to the demand of three dimensional modeling, which is benefit for cultivating students' ability of spatial imagination and innovative thinking and meeting the needs of development of situation. Test paper two extra adds an important skill--the assessment of three dimensional modeling, and it highlights the cultivation of practical ability, which especially is accordance with the training objective of the applied undergraduates.

## Consideration

The test paper not only can be used to review the extend of the students' mastery of the knowledge of one course, but also test the teachers' teaching ideas and the understanding and grasp of the training objective for students.

As the independent colleges, many courses are instructed by their maternal teachers. How to make a difference between the junior college students and the undergraduates is becoming a problem, which should be paid attention by related educational administration. The teachers should not simply care the score and passing rate of the students, while the gold content of the score is crucial. Concerned experts ought to be invited to analyze the test paper according to the files about teaching outline, teaching basic demands and ability training, to evaluate the teaching quality of one course, meanwhile can help the teachers improve their teaching methods through the feedback. It is also in favor of their teaching quality, which accords with the training objective of the application undergraduate students.

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