# DEVELOPMENT OF IMPROVED TEACHING PRACTICES BASED ON C PROGRAMMING LANGUAGE

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***Abstract***— *Practice teaching is a very important step in the teaching process of many courses, especially in the development of software for computer training. Program design in C is one of the core courses of computer majors at many universities. Because it was a precursor to later courses such as data structures and object-oriented technology, it was considered one of the most important classes in computer science. Therefore, all computer teachers understand its importance in the entire teaching process. This article provides an overview of training for designing C programs. The result shows that improved teaching methods have a positive effect on student learning.*

***Keywords-****program design; measures; teaching process; examination mode*

## Introduction

The purpose of higher education in our country is to train highly qualified and good talents. Emphasis is placed on improving the ability to solve practical problems, which is the goal of teaching at Chirchik State Pedagogical University. In order to achieve the learning objective, there must be appropriate teaching methods accordingly. Applied nature is manifested in the field of informatics and technology in engineering colleges. How to improve and teach students' application skills is a

necessary question for teachers. The concept of application should not only remain on the surface of teaching, but should also be implemented in the process of reading and teaching. Software Design is a required class of Computer Science and Technology major and it covers many programming languages such as C, C++, C#, Java, etc. C is the most important of all classes because it is the main course for other classes. The main purpose of study is not only to master the program in higher education of Uzbekistan [1,2, 7,8]. Because if students do not learn one lesson well, then series lessons related with the course cannot be learned well, which will lead to the consequence that students cannot master any ability of programming. Then many students cannot obtain a proper work. If many students of one university cannot find proper work, the college cannot develop well in long time[9,10]. Therefore, the task of teachers in private college is not only teaching but also maintaining the honor of the college. The first task of a teacher of computer science and technology is making the students learn a skill well and improving the ability of application.

**The need for teaching reforms.**

Traditional teaching methods focus more on explaining the grammar of the program. Several introductions are made on how to analyze and solve problems. Do not ignore the students' ability to practice civilized. The potential ability of students is not mined. By the end of the workshop, students will know only the basic structure of C and basic grammar. Maybe they can see programs that others have programmed or read programs. But students cannot independently solve one specific program for a problem. The ultimate goal of teaching programming is to equip students with coding and debugging skills. Therefore, it is necessary to reform the education system [3,4].

**Problems of students in the learning process**

A. Confusion and lack of interest The object of study in Si programming is the first-year student with no programming background. They have no idea about programming design. Of course, there is a situation where students study literary arts in their senior year of engineering in college. The situation can make research difficult. Initially, students do not know the role of classroom learning. According to them, the ultimate goal is to pass the final exam. Many teachers focus on explaining the lesson content. The teacher misses the students' understanding of this course, which leads to students' lack of interest in learning the lesson and confusion about the course.

B. Lack of motivation for learning Some of the students always fall into a passive learning situation. Thus, students cannot complete a task on their own unless the teacher tells them to do it step by step. That is, if the teachers do not organize the

learning task, the students will do nothing but play. Students lack awareness and initiative. If the situation persists for four years, the results are dire [7].

**Problems of teachers**

A. The relevance of the selected textbook is not strong. Most universities have chosen the book "C program designing" by Professor Tan Haoqiang as a textbook. The rules of program grammar are detailed in the book. In this context, this book can be used for non-computer major students International Conference on Educational Technology and Management Sciences (ICETMS 2013) © 2013. Authors - Atlantis Press 1361 textbook. On the other hand, the main task of teaching aimed at students of the computer department is to improve programming skills, but there are few concrete examples of programming in the book. Therefore, it is not very correct to take it as a textbook for computer department students.

B. Inadequate content and methods of teaching Private college teachers have a more difficult teaching task than public college teachers. For example, in Hunan International Economic University, the teaching duty of a general teacher is 12 hours per week, while in a public college, the teaching duty of a general teacher is 4 or 8 hours per week. The teacher teaches not only computer science, but also students of other departments. Due to the heavy task of teaching, teaching content and teaching methods are not properly separated by some teachers. Circumstances indicate that there are no clear goals.

C. Single teaching method and no interaction Teaching is dominated by teachers. And the students are in a subordinate position. A lot of time in the lesson is spent by the teacher on explaining the teaching content. The only action students can take is to listen to the teacher without spending more time discussing other problems. Students are always in a submissive position throughout the class. So the teachers should allow the students to ask some questions and discuss by the students. Teachers want to do the same. But the reality is that there is too much content to explain to leave time for discussion.

D. Teachers do not build a support mechanism after class. A common drawback is that teachers leave the classroom after completing their teaching tasks, which does not solve some questions in time. Of course, it can teach problem-solving skills and increase the problem-solving level of students. But the disadvantage is that it frustrates the reader, which can have bad consequences.

**The improved methods**

A. Clarify educational goals, increase interest in learning and increase motivation to study. Since first-year students have almost no understanding of programming, it is not necessary to explain the exact content of the teaching in the first lesson. The emphasis of the first class is to introduce the importance of the course.

Perhaps we can start the first lesson with a small game, and the teacher can tell the students that the game can be programmed using the C language. Thus, it is possible to increase interest in learning and improve learning motivation. Thus, students can familiarize themselves with the role of this course. And teachers can recommend to students to read several types of reference books to broaden their worldview. It can also mobilize students' enthusiasm and initiative[11].

B. Changing the teaching mode and emphasizing different contents according to the objects of teaching, strengthening interaction Traditional teaching methods are used in the teaching process. This is a method of combining the blackboard with chalk. Since the C programming course is a hands-on course, it is not possible to show the program on the board. Traditional teaching methods cannot meet the requirements. We combine traditional teaching method with multimedia teaching to meet all kinds of requirements. Satisfactory results can be achieved. During the teaching process, you can ask different questions that the students have to answer. In this way, it is also possible to strengthen the interaction. At the same time, different educational objects may be given different emphasis. Teachers can pay more attention to understand students.

C. Practical teaching method the practical teacher should pay attention to the teaching method and examination mode. They should carefully examine the experimental issues according to the teaching method. Parts of the problems should be more difficult. So, this method can make it difficult for students. Then more interests can be complicated [2,10].

D. Practical Aptitude Test In our university, the C program design exam method is a written exam, which focuses more on testing the basic theoretical knowledge. Some students get high marks but they cannot make any program which shows that the written exam is wrong. And it cannot check the actual level of students. In the future, the final exam will be changed to a test with more emphasis on practical ability. Students cannot score high if they do not know the basic theoretical points. Thus, such an exam can lead students to pay more attention to programming.
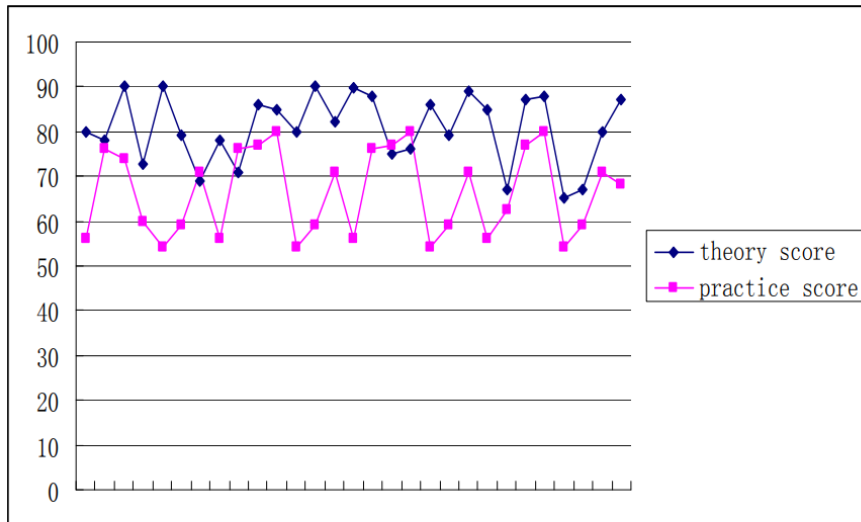
Figure 1.   Students' scores without using new measures

TABLE I.        THEORICAL  SCORE   OF   CLASS1(BEFORE  TEACHING REFORMING)

| Class No. | Total students | Bellow 60(%) | 60-69(%) | 70-79(%) | 80-89(%) | 90-100(%) |
|-----------|----------------|--------------|----------|----------|----------|-----------|
| 1 | 30 | 0% | 4 | 8 | 14 | 4 |

TABLE II.        PRACTICAL  SCORE   OF   CLASS1(WITHOUT  TEACHING REFORMING)

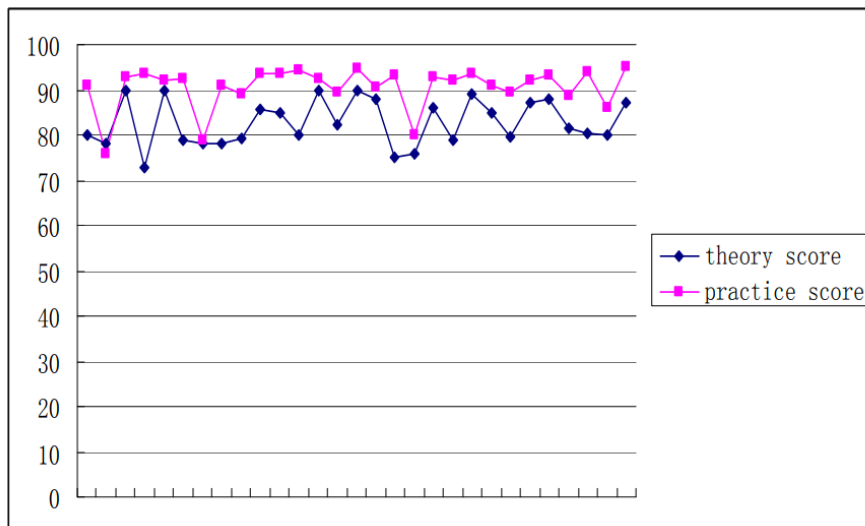| Class No. | Total students | Bellow 60(%) | 60-69(%) | 70-79(%) | 80-89(%) | 90-100(%) |
|-----------|----------------|--------------|----------|----------|----------|-----------|
| 1 | 30 | 12 | 4 | 10 | 4 | 0 |



Figure 2.   Students' scores using new measures

TABLE III. THEORICAL SCORE OF CLASS2(AFTER TEACHING REFORMING)

| Class No. | Total students | Bellow 60(%) | 60-69(%) | 70-79(%) | 80-89(%) | 90-100(%) |
|---|---|---|---|---|---|---|
| 2 | 30 | 0 | 0 | 9 | 16 | 5 |

TABLE IV. PRACTICAL SCORE OF CLASS2(AFTER TEACHING REFORMING)

| Class No. | Total students | Bellow 60(%) | 60-69(%) | 70-79(%) | 80-89(%) | 90-100(%) |
|---|---|---|---|---|---|---|
| 2 | 30 | 0 | 0 | 2 | 4 | 24 |

**Conclusion**

This article describes some of the shortcomings in the teaching and learning process. According to the conditions of our college, a number of measures are being taken to improve educational efficiency. College teaching methods and examination arrangements are discussed in detail. The new teaching idea of experimental teaching is clearer. The result shows that these measures have a good effect on improving the quality of teaching. On the other hand, in classes where teaching methods are not used, the theoretical score is higher than the practical score. Statistical tables and figures are shown below (Figure 1, Figure 2, Table I, Table II, Table III and Table IV).

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