# Research on C Language Assessment Method Based on Process Assessment

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*Abstract:* This article explores in depth the assessment method of C language teaching based on process assessment, aiming to promote the improvement of teaching quality and the comprehensive development of students' abilities through strengthening the evaluation in the learning process. The article first analyzes the limitations of traditional assessment methods and explores the process based assessment method for C language teaching. The aim is to provide new ideas for the reform of C language curriculum teaching by analyzing the effectiveness of this method in improving teaching quality, stimulating students' interest and motivation in learning.

*Keywords: C Language; Process Assessment; Assessment Methods*

## I. INTRODUCTION

As the fundamental language for computer programming, C language plays an important role in higher education teaching. Its teaching is of great significance in cultivating students' programming thinking, algorithm design, and problem-solving abilities. However, traditional C language teaching assessments often focus on summative exams, such as closed book written exams or computer-based exams. Although this assessment method can reflect students' knowledge mastery to a certain extent, it is difficult to comprehensively evaluate students' practical abilities, innovative thinking, and efforts and growth in the learning process. This can easily lead to serious exam oriented mentality among students, neglecting their daily learning accumulation and practical ability improvement. Therefore, this article proposes a C language teaching assessment method based on process assessment [1,2], aiming to comprehensively, fairly, and timely measure students' learning effectiveness through diversified assessment methods, promote students' programming ability, and improve the quality of course teaching.

## II. ANALYSIS OF TRADITIONAL ASSESSMENT METHODS

The traditional assessment method for C language teaching mainly relies on final exams. This approach often only assesses students' memory and understanding of knowledge points, and cannot fully reflect their practical ability, innovative thinking, and problem-solving skills. Students may resort to rote memorization in order to prepare for exams, neglecting their in-depth understanding and application of knowledge. In addition, due to the final exams being held at the end of the semester, it is not possible to provide timely feedback on students' problems during the learning process, resulting in the accumulation of problems and affecting subsequent learning. In order to improve teaching quality and comprehensively grasp students' learning situation, it is necessary to adopt more reasonable assessment methods.

Process assessment is an assessment method that focuses on students' learning process, learning attitude, and ability development. It not only focuses on students' learning outcomes, but also values their thinking, exploration, and practical abilities demonstrated during the learning process. By tracking and evaluating the entire learning process of students, process assessment can more accurately reflect their learning status and provide timely teaching feedback for teachers. Compared with traditional assessment methods, process assessment focuses more on students' learning process and growth trajectory, aiming to promote students' self-directed learning and continuous improvement through timely feedback and motivation.

## III. DESIGN OF C LANGUAGE ASSESSMENT METHOD BASED ON PROCESS ASSESSMENT

The design of a C language assessment method based on process assessment aims to comprehensively evaluate students' understanding level, practical ability, problem-solving ability, and continuous learning motivation in the process of learning C language. The specific implementation process and steps are as follows:

### A. Set assessment objectives

The assessment objectives are specific requirements for the desired outcomes of course learning, with the aim of providing a comprehensive evaluation of course teaching. Through course assessment, we can comprehensively focus on students' learning process, timely discover and solve problems in teaching, and improve teaching effectiveness. The assessment objectives of C language courses mainly include the following aspects:

1) Knowledge mastery: Ensure that students master the basic syntax, data types, control structures, functions, arrays, pointers, and other core concepts of C language.

2) Practical ability: Through programming practice, enhance students' abilities in code writing, debugging, and problem-solving.

3) Project practice: Through small-scale projects, students can experience the software development process, including requirements analysis, design, coding, testing, and document writing.

4) Learning attitude: Evaluate students' learning attitude, teamwork ability, and motivation for continuous learning.

### B. Planning and Assessment Content

The planning and design of assessment content is to support the corresponding assessment objectives. The C language course adopts process assessment, and the main assessment contents are as follows:

1) Regular grades (40%)

Classroom participation (10%): Evaluate students' participation and understanding through classroom Q&A,

group discussions, reverse teaching, and other methods.

Homework completion status (20%): including basic exercises, comprehensive applications, and case analysis. Homework must be submitted on time and necessary comments must be made to the code.

Program Design Experiment (10%): In the laboratory classroom, complete designated programming tasks and write experimental reports.

2) Project assessment (30%)

Group project (20%): Students are divided into groups to complete a small C language project, such as a student performance management system, a simple calculator, etc.

Project Presentation and Defense (10%): Each group will present the project and answer questions from teachers and classmates.

3) Final Exam (30%)

Theoretical exam (15%): Closed book exam, mainly testing the basic concepts and grammar knowledge of C language.

Programming Exam (15%): In the computer-based exam, students are required to complete one to two programming questions within a specified time, with moderate difficulty and covering the core content of the course.

*C. Develop assessment criteria*

Develop clear assessment criteria and scoring rules to ensure fairness and impartiality in the assessment process. The assessment criteria should cover multiple aspects such as knowledge mastery, skill application, innovative thinking, and learning attitude, and different weights and scoring standards should be set according to different assessment contents.

## SUMMARY

The C language assessment method based on process assessment is an effective teaching assessment model that can comprehensively, fairly, and timely evaluate students' learning outcomes and promote their self-directed learning and continuous improvement. It can more accurately reflect students' learning situation, stimulate their learning interest and motivation, cultivate their self-learning and innovation abilities, and effectively improve the teaching effectiveness and quality of the course.

### *References*

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