

A COMPUTER-ASSISTED MARKING SYSTEM FOR ENHANCING EDUCATION EQUITY

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ABSTRACT. *Examination is an effective method for evaluating educational achievements since the establishment of education system. Whether an examination succeeds or not is determined largely by the accuracy and equity of marking. In this paper, a Computer-Assisted Marking System (CAMS) is presented. The basic concepts of CAMS including questionnaire designing, scanning and processing are described in detail. Ascribe to the advantages of CAMS such as blind marking mechanism, random task distribution, repetitive marking and real-time supervision, CAMS is capable of marking more accurately and more quickly than traditional human marking. Three types of marking user interfaces in accordance with different features of examination questions are provided to promote the efficiency of marking, decreases markers' physical and mental fatigue. Approximately 10 million markings of examination answer sheets have been processed by CAMS and the mistake-free results prove that CAMS is robust and meets the requirements of large scale examinations.*

Keywords: Education equity, CAMS (Computer-Assisted Marking System), Marking, Subjective question, Objective question, Real-time supervision, User interface, Human computer interaction

1. **Introduction.** The right to education is a fundamental human right. Each individual, irrespective of race, gender, age, nationality, ethnic or social origin, religion or political preference, is entitled to a free elementary education. This right is explicitly stated in the United Nations' Universal Declaration of Human Rights, adopted in 1948: "Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit ... " [18]. At the same time, the right to education is an important tool for improving the quality of life, a foundation of many other human rights, and a key in economic development. However, in developing countries, even in developed countries, due to a lack of educational resources, not all the applicants may have an equal opportunity to gain access to learning facilities and curricular programs.

Under such a situation, examination has become an effective means to balance the allocation of the educational resources. Only the persons who pass the examination can

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