Reform and Practice of College English Paperless Examination Based on ITEST Test System

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Abstract—**With the development of information technology and mobile Internet, the conventional, single and static examination mode cannot meet the diversified examination requirements of students. It is an irresistible trend to explore new college English test models to meet the requirements of the times. Paperless exams have an unparalleled advantage over traditional paper exams. However, the preparatory work before the implementation of the reform is numerous, and teachers and students need to be proficient in the use of the platform. At the same time, coordination and cooperation of various departments of the school are also indispensible. During the implementation process, some defects are found in the design of the platform and some opinions and suggestions are put forward on how to improve it. Through interviews and questionnaire surveys on teachers and students, it is found that teachers and students both give positive feedback to this test mode, which might be the trend of future test reform.**

Keywords—iTEST test system; College English; paperless test; questions and suggestions; feedback

I. INTRODUCTION

College English teachers are faced with new development opportunities and challenges in the "Internet+" era. The new teaching methods such as MOOC, micro-class, and flip classroom have subverted the traditional English teaching concepts and teaching models, greatly enhancing the students' learning autonomy, satisfying their individualized exploration and learning needs, and improving their learning interest and learning efficiency. At the same time, the deep integration of Internet technology and testing methods has also greatly changed the method and carrier of the examination. The network-based college English examination reform has also become inevitable.

As early as January 2007, the Ministry of Education and the Ministry of Finance jointly issued a guidance on the implementation of the "Undergraduate Teaching Quality and Teaching Reform Project in Higher Education" (Teaching [2007] No. 1). The guidance clearly stated, "To develop online examination system, formulate relevant criterion, and gradually implement the online examination of the national unified examination for college English and online education courses, at the same time create a safe, convenient and efficient examination platform." The College English Test Band 4 (CET4) and Band 6 (CET6) started the pilot project for network testing on December 21, 2008. In addition, the

"University English Teaching Guide (Draft) (2014)" promulgated by the Foreign Language Teaching Guidance Committee of Colleges and Universities also clearly stated that "in the form of testing, a college English test question database should be built and network testing based on computer should be promoted." Thus, the reform of college English paperless examination is imperative.

II. ADVANTAGES OF PAPERLESS EXAMS

The iTEST University Foreign Language Testing and Training System is a one-stop test cloud system that provides online assessment resources and services for foreign language teaching in colleges and universities. It can meet the needs of various levels of examinations and daily formative assessment tests.

The paperless exam based on the iTEST platform has the following advantages over the traditional paper-based exam:

A. Changing the Way of Preparing Test Paper and Ensuring the Quality of the Test Paper

The "auto-generating test paper" function of the iTEST platform can help prepare test paper automatically from the test question database of the system, avoiding the errors caused by manual input and ensuring the quality of the paper. At the same time, the self-built digital test question database can also effectively utilize and reuse its own resources, enriching the dimensions and direction of the examination.

B. Innovating Marking Method, Making the Evaluation Objective and Fair

The iTEST system can automatically grades all objective and subjective questions in a paperless exam. For subjective questions, the system can fully apply artificial intelligence technology, from vocabulary, grammar, collocation and other dimensions, combined with language quality and translation quality to score translation questions. Also it scores students' composition from the perspective of the relevance to the subject and coherence. At the same time, the subjective parts of translation and composition are all input with the keyboard, and the writing is not unclear which does not affect the scoring of the teachers. This guarantees the fairness of the marking, and scientifically tests the teaching as well as improves the test's positive backwash effect on teaching practice.

C. *Enriching the Dimension of Performance Analysis and Helping Teachers Get Accurate Teaching Feedback*

Multi-dimensional performance analysis is an important part of scientific evaluation of teaching and learning. The iTEST platform can provide detailed analysis of the scores from the four dimensions, that is, test details, score distribution, test difficulty and interference analysis. The analysis includes the detailed information of each class, the highest score, the lowest score, the average score, the median score, the standard deviation, the scores of each grade, the difficulty level of each question and the analysis of the interference items of each question. This not only gives a comprehensive evaluation of the test paper, but also gives a detailed presentation of the student's deficiency, which can help the teacher to obtain accurate teaching feedback. Teachers can teach more appositely to further improve their teaching.

III. REFORM DESIGN AND IMPLEMENTATION PROCESS

In order to better promote the deep integration of information technology and college English test, simplify the examination process, improve work efficiency, reduce the cost of examination, improve the positive feedback effect of the examination on teaching practice, the project team of the paperless examination reform began to prepare this reform in February, 2016. When the reform plan became acceptable and reliable, the platform training to teachers and students were started. First teachers' and students' information were input into the platform, then classes for mock and pilot exams were selected to learn from the problems that arose. Before the implementation of the large-scale examination, a test question database suitable for the students of the school was built to meet the requirements of different levels of test papers.

On the basis of the previous mock exam and successful pilot exam, at the end of the first semester of 2017-2018, the project team began the implementation of the paperless reform. All of the undergraduate students in Grade 2016 and 2017, namely, a total of 7291 students, including 3,924 undergraduate students in 2016 and 3,367 undergraduate students in 2017 participated in the university English paperless exams. The exams lasted two days, four exams a day. A total of 19 formal examination rooms, 3 mobile examination rooms and 2 alternate examination rooms were arranged. Due to the adequate preparation and the proper anticipated plan, this large-scale and high-density paperless examination did not have any accidents and was a complete success.

Then, the 2017-18 second semester final exam, the 2018-19 first semester final exam and the supplementary exam were successfully carried out with this model. So far, a total of 55 paperless exams have been conducted on the platform, all of which are progressing smoothly.

IV. PROBLEMS AND COUNTERMEASURES TO THE iTEST PLATFORM

The paperless test simplifies the teachers' complicated work of preparing, scoring and filing the examination papers,

greatly improving the efficiency of the test. But in the implementation process, there arose many problems about the platform, and the project team tried hard to find solutions in order to make the subsequent tests progress smoothly.

A. *About the Test Template: Cannot Be Private After Publication*

In the iTEST system, if an exam is to be posted, a test template should be selected first, and the template can be chosen from the system. If the templates in the system are not ideal, an extra template can be built. However, most of the templates in the system are CET4 or CET6 templates. For most freshmen, they are difficult. In order to solve this problem, teachers responsible for preparing test papers built some templates suitable for students of different levels. In order to ensure the privacy and fairness of the final exam, each of the teachers who built the template set the label as "private" to ensure that they were not open to other teachers and not used in their usual exercises. However, when it was nearing the end of the term, some of the teachers were detected to have already used these templates to prepare papers for students to exercise. Once the test template is used, it can no longer be modified. If the builders want to change the question types, they have to re-build a new template, which will waste them a lot of energy and time. Later, after inquiring about the platform technicians, it is clear that the current system settings are, as long as the template is released, whether it is set to "private" or not, all the teachers in the system can have access to it. Because the current test question database has a limited amount of questions, teachers responsible for preparing test papers have to find out which questions were used with the templates, and then re-edited the final test papers, which undoubtedly increases the workload of them. Therefore, it is recommended that this problem be resolved when upgrading the platform.

B. *About the Examination Arrangement: Only One Exam Is Arranged Under One Test Name*

Students of all levels and classes of Grades 2016 and 2017 took part in the first large-scale paperless examination. The total number of classes participating in the tests of College English (1) and College English (3) is 141. At present, altogether there are only 24 computer rooms (including mobile test rooms and alternate test rooms) in the school, so it is necessary to arrange eight exams in two days.

In the "exam management" directory of the system, when the "arrangement of examination rooms and candidates" are carried out in the "pre-test stage", under the name of one test (such as the Final Exam of the "College English (1)" in the First Semester of the 2017-2018 School Year of Shandong University of Political Science and Law), the administrator of the platform tried arranging four exams, but it can't be done anyway. Later, after trying many times and consulting the platform technicians, it was known that the four exams have to be arranged with four exam names. Because the procedures of "test paper arrangement, candidate arrangement, examination room setting and invigilation setting" are repeated in each exam, this greatly increases the workload of the examination arrangement. What's more,

after the exam, the statistics and analysis of the test results can only be performed on the basis of one exam, and the analysis of all the students of the entire grade cannot be carried out. This also brings inconvenience and trouble to the teachers' later work.

C. About the Test Question Databases: Database for Test and Database for Exercise Are Mixed

The iTEST test platform and the test question databases are sold separately. Most schools do not purchase all the test question databases; besides, the questions provided by the platform are mostly about CET4 or CET6, or about the FLTRP New Vision College English textbook. Therefore, most schools that use the platform for tests have to build their own test question databases. However, all the teachers in the platform can have access to question databases built for testing as long as the recorded questions are issued. In order to ensure the fairness of the test, teachers responsible for preparing test papers must be sure that the questions in the test papers are not exercised previously by the students. To promise that, they have to input more questions into the question database or the newly-input questions will not be issued for the time being until other teachers do not use the platform. When they finished preparing test papers, the issued questions will be cancelled immediately so others will not get access to them. This will undoubtedly bring inconvenience to them, adding unnecessary troubles and extending working hours. Therefore, it is suggested to set the usage rights to the self-built question databases when the system is upgraded, for example, only the administrators or a certain part of the teachers have the right.

D. About the Account Security: the Same Account Can Be Logged in Simultaneously with Different Browsers

In the daily use, the two administrators found that they can log in the same administrator account with the 360 browser and the Google browser at the same time in the same or different IP, without affecting each other. If students find this bug, it will increase their chances of cheating. In order to avoid this, all the IP address segments outside the examination rooms were closed on the day the final tests were carried out, and at the same time, all the external networks were closed during the exam, eliminating the chances for students to cheat by searching the Internet.

E. About Test Countdown Function: Students Can Use Them to Cheat

Each test has a time limit. When the test starts, the system automatically starts counting down. When the countdown ends, the test paper is submitted automatically. Some students find in their usual class tests, if they quit the system and do not submit the test paper, the countdown will stop. After they log in again, the countdown will continue and they can continue to take the test. In one final exam, when one student was doing the writing part, he quitted the system and started drafting. After the draft had been done, he logged back into the system to continue the exam to lengthen his time for the exam. When the invigilator discovered it, he notified the administrator in time, and the administrator terminated the student's exam in time at the end of the exam, and forced him to hand in the paper from the backend.

V. FEEDBACKS OF PAPERLESS TESTS FROM THE TEACHERS AND STUDENTS

Shortly after the first large-scale paperless examinations, the research team conducted interviews and questionnaire surveys for teachers and students to learn their opinions and suggestions on the paperless exam.

A. Teacher Interview

After the end of final exams in the first semester of 2017-18, the research team conducted teacher interviews on the discrimination of paperless test scores, test validity, test paper questions, and difficulty of test questions. Nine teachers participated in the interview. The results of the interviews are summarized as follows:

"The paperless test can measure the true language level of the students"; "The scores of the students agree with their performance in class"; "The discrimination of the exam is relatively good, however, the average score may be slightly lower"; "I like paperless testing, it improves the efficiency of our scoring. In the past, grading the students' papers went on for almost a week, but it's much faster now; "The subsequent performance statistics and multi-dimensional performance analysis are of great help to the research on teaching"; "The current paperless exams and paper exams have similar question types. In fact, some new types of questions can also be added, for example, in the listening test, some video materials can also be used, which is more vivid and authentic."; "I also hope that we can use this platform to carry out human-machine dialogue to take oral exams in the future, so that students' performance can be more objectively reflected."

B. Student Questionnaire Survey

The questionnaire was open to 743 students (the online questionnaire, two classes of Grade 2017 were selected from each college), and 743 responses were received, all valid. The feedback from the student questionnaire is summarized as follows:

1) About the environmental familiarity and acceptance of paperless test: According to the questionnaire data, with the increasing familiarity and usage of computers and networks, most students are not subjectively afraid of paperless test. Computer-based paperless tests are similar to traditional paper-based tests in testing materials and there is little difference with regards to the test results. As for the test anxiety of some students, the research team later learned through communicating with them that their anxiety came from testing, not paperless model.

2) About the evaluation of test paper and test results for paperless exam: The survey results show that students are satisfied with the test paper structure in the paperless test. Most students believe that paperless test show their English level objectively and truthfully. However, some students

believe that the paperless test didn't show their real English proficiency. From the options that follow, research team learned that some students encountered some equipment failures during the exam, which affected their test scores; and some other students had lower test scores only because they were not skilled in the operation of the computer. With the popularity of smartphones and the application of various APPs, most students are accustomed to using mobile phones to complete various operations, but the input method of the mobile phones and the input mode of the computer keyboards are quite different. We believe that if the students have more opportunities to practice tying with the keyboards, this problem will be solved.

3) About the future test modes: For the future test forms, most students believe it is the paperless test. A small number of students are accustomed to paper examinations over the past ten years, they still cannot keep pace with the times and unable to accept this new thing psychologically. But with the development of Internet technology, paperless examination has become the trend. Today's language tests such as TOEFL, IELTS and the GRE exams have all been paperless. At the same time, it is clarified in "National Judicial Examination Implementation Measures" that the legal professional qualification examination is proposed to fully implement the computer-based examination method for objective examinations in places where conditions permit in 2018. In the future students should gradually accept this new test mode.

VI. CONCLUSION

With the progress of college English teaching reform and the development of information technology and mobile Internet, the traditional, single and static examination mode cannot meet the diversified examination requirements of the students; the examination mode must be informatized and intelligent. Making full use of information technology to build a new test mode for college English is the requirement of the times. The reform of college English paperless test based on the iTEST system is a product of this requirement. However, the preparatory work before the implementation of the reform is in abundance, and various problems and challenges will arise, which requires the coordination and cooperation of various departments of the school. In order to improve this new test mode and further improve the reliability and validity of the test, all colleges and universities should continue to explore and practice, anticipate problems or difficulties that may arise in the examination process, and solve various software defects and hardware problems with platform technicians jointly.

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