

EXPLORING THE USE OF LINEAR-ON-THE-FLY TESTING ON STUDENT ASSESSMENT FOR THE POST-PANDEMIC ERA

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INTRODUCTION

Computer-Based Testing

A lot has changed from teacher-made paper-based tests that are administered in a specific venue to computer-generated online tests that can be taken using any internet-connected mobile devices due to the innovations and accessibility to technology. Increased availability and accessibility to computer technology have provided opportunities for researchers and educators to develop different means of creating and administering tests. From these innovations, a new trend of test delivery known as computer-based testing (CBT) has emerged. Recently, different models of CBT have been developed to suit the needs and purposes of testing.

The increased exposure and access of Filipino students to ICT, as well as the shift to online classes due to the pandemic increased the use of computer-based assessment and encouraged the innovation of testing in the Philippines.



INTRODUCTION

Computer-Based Testing in the Philippines

Computer-based tests are now used in the school-wide assessment of student learning and government-administered certification tests. Assessment service providers like the Rex Institute for Student Excellence (RISE) offers computer-based tests of student learning through an online platform. Some government-administered certification tests such as the Philippine National Police Entrance Examination-administered through the Computer-Assisted Examination (CAEx) (National Police Commission, 2018), the Philippines Overseas Employment Administration (POEA) Korean Language Test, and even the Licensure Examination for Geologist have been administered through computer-based modality (Professional Regulation Commission, 2022). In 2021, the Supreme Court of the Philippines conducted a pilot or mock Bar Examination to test the feasibility of a computer-based testing system (Supreme Court, 2021).

In terms of national assessment, there is a memorandum that has been issued by the Department of Education (DepEd) that implies that the National Achievement Test (NAT) will be computer-based to assess the learning loss of Grade 7 and 11 students (Department of Education, 2021). The DepEd has also started the training of Grade 4, 5, and 6 teachers for the pilot of a computer-based reading assessment (Department of Education, 2022).

INTRODUCTION

Common Models of Computer-Based Testing

The majority of the examples of computer-based tests aforementioned are those that can be considered as a computerized version of a paper-and-pen test. These tests are assembled way before the administration of the test and they are uploaded to a computer system or online platform which will then be accessed by the examinee using a computer or a device with access to the internet. This model of computer-based test can be referred to as a linear, fixed-form computer-based test.

Computer-based testing (CBT), or computer-based assessment, is a mode of assessment where the test is created, delivered, and marked by a computer. Common models of CBT are computer-adaptive testing, multi-stage adaptive testing, and linear on-the-fly testing.



RESEARCH QUESTIONS

This article aims to explore the characteristics, advantages and limitations of the linear on-the-fly testing (LOFT) model and discuss its adaption in educational testing in the Philippines.

Specifically, this study will answer the following questions:

1. What are the characteristics of the LOFT model?
2. What are the advantages and limitations of this model?



METHODOLOGY

Qualitative synthesis was used in this research to gather data and information about the characteristics, advantages and limitations of the LOFT model to have basis in recommending its use in the Philippines.

Google Search and Google Scholar, and to some extent Google Books, were used for finding relevant literature using the keywords ‘linear on-the-fly testing’, ‘LOFT’, ‘computer-based testing/assessment models’, ‘on-the-fly automated test assembly’, and ‘automated test assembly’.

Published and unpublished thesis, journal articles, conference presentations, online articles, book sections, department memoranda and issuances, and other academic publications that were published or written from 1950s to the present were considered. The reason for the time frame is that CBT started to become part of the educational setting in the 1950s (Haigh, 2010).



RESULTS

Characteristics of the LOFT Model

These are the characteristics that the LOFT model shares with other CBT models.

Improved test security.

- Test and test items cannot be shared with other examinees as they are unique for each examinee. In the case of the LOFT model, it creates unique test forms for each student and the exposure of test items are controlled.

Upgraded and varied test formats and response collection.

- The use of computer technology allows a variety of test formats and tasks offered by CBT models: from the simple multiple-choice format, constructed-response items, and essays, to technology-enhanced items using novel response-capturing devices.

More efficient administrative process.

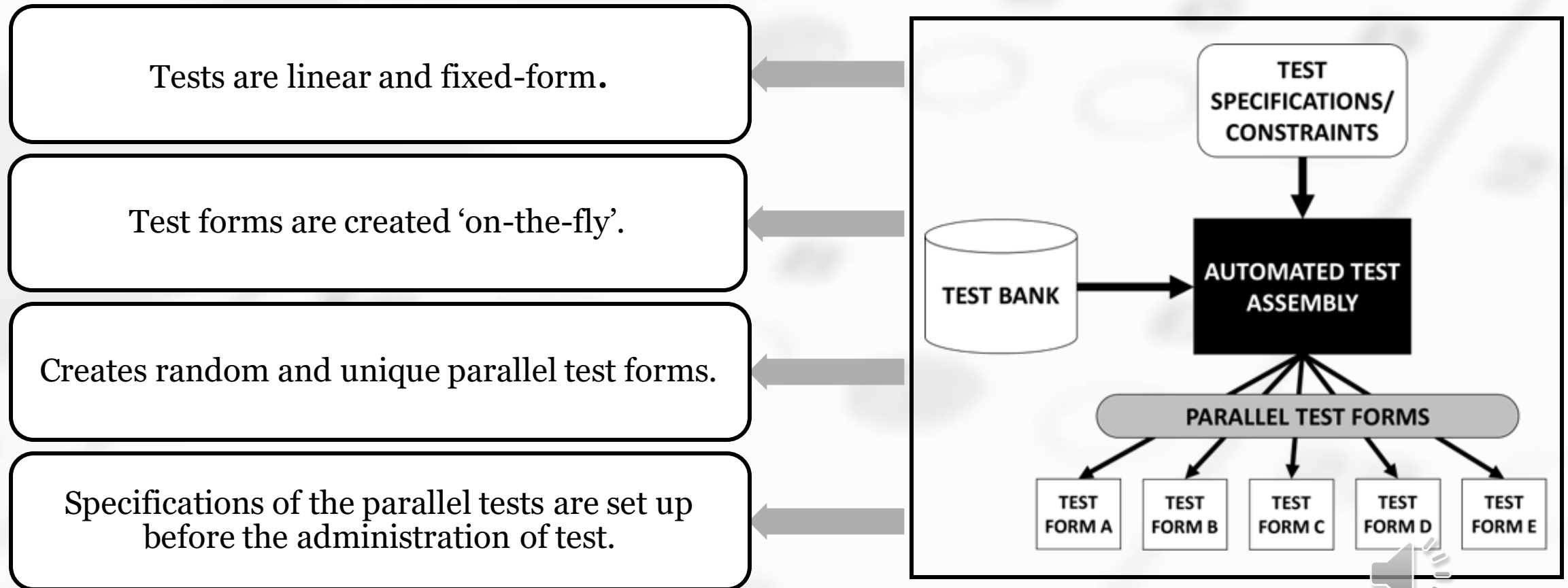
- The LOFT model and other CBT models, creates, administers, and marks the test. This decreases the time and effort that teachers and test administrators need to spend preparing, administering, and checking tests.



RESULTS

Characteristics of the LOFT Model

These are specific characteristics that the LOFT model has based on its operation.



Simplified Diagram of the LOFT Model

RESULTS

Advantages and Limitation of the LOFT Model

Advantages

Ease of administration and flexible test administration schedule

Automatic scoring, leading to faster feedback and test report generation

Improved test security and less risk of over-exposure of test items

More accurate and efficient creation of parallel test forms

Cheaper to develop compared to other CBT model

Limitations

LOFT is not an adaptive CBT model.

Less accurate in measuring individual proficiency compared to adaptive CBT models

Test forms are relatively longer compared to other CBT models

Over exposure of test item might occur if test bank is not large enough

Note: - vs. paper-based testing; - vs. other CBT models



DISCUSSION

- The linear on-the-fly testing (LOFT) model can be the next innovation in computer-based testing and assessment in the Philippines in the post-pandemic era. The LOFT model is more advantageous compared to traditional paper-based testing and its computerized version.
- Considerations should be taken before using the LOFT model in the Philippine educational setting:
 - ✓ The LOFT program may be developed or sourced from an assessment service provider, and either way, both will require funding. Educational agencies and testing organizations must seriously research the transition from traditional testing to LOFT and other more advanced CBT models.
 - ✓ The limitations of the individual and schools in terms of resources may limit the application of the LOFT model in Philippine educational testing and assessment.
- Certification exams like the Philippine Educational Placement Test (PEPT), Accreditation and Equivalency Test (A and E Test), licensure examinations, and entrance examinations can be delivered using the LOFT model. These tests are administered in a venue and the number of examinees can be controlled, making it easier to provide the necessary resources, such as computers and/or internet access, for the LOFT model to be utilized.



CONCLUSION

- The LOFT is a viable alternative to paper-based testing. It has the advantages of computer-based testing in terms of increased security, variety of test forms, and flexibility of administration. The real-time automated test assembly of parallel test forms of the LOFT model is more accurate and efficient compared to the manual creation of parallel forms.
- The use of LOFT in the Philippine educational setting in the post-pandemic era may be limited due to the shortcoming of necessary technological resources of the examinee and the public schools.
- As a consequence of the limitations of resources, the LOFT might not be feasible for large-scale assessments such as national assessments like NEAT and NCAE, as they are taken by a very large number of examinees on a specific date.
- The LOFT model could be used in certification tests, like the PEPT and A and E Test, licensure examinations, and entrance exams where the venue of the tests and the number of examinees can easily be managed by test administrators.



Thank you for listening!

Salamat sa pakikinig!

