

Language Testing at Entrance Examinations for Master's Degree Program and PhD in the Republic of Kazakhstan

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Abstract: Higher education predetermines the socio-economic role of a government at the global arena. The education system of Kazakhstan has undergone many changes in order to improve its quality and create conditions to ensure its adaptation to integration requirements into the Bologna process, as well as changes in the world economy, culture, and social society on the whole.

The article represents the entrance exam technology for the master's degree and doctorate in the form of testing. Entrance exam on foreign language is an important criterion for selection of candidates. It reveals the importance of foreign language skills at a country scale and the need to modernize the principles of creating tests, taking into account the international language certification.

A comparative analysis was made based on test results of 2012 and 2013, using of statistical processing by the Rasch model for dichotomous ratings "a correct answer — a wrong answer". This analysis allows determining the quality of functioning items, as well as compliance with the difficulty level of the test to the readiness level of applicants. Statistical analysis shows the advantages and disadvantages of test and as a consequence the practicability of modification of their structure and specifications.

Key words: language certification, the entrance exam to master's degree and doctorate, analysis of the quality of tests

The education system of Kazakhstan has undergone many changes in order to improve its quality as well as access to the worldwide educational arena. One of the most important changes was the transition to a three-level system (secondary-higher-postgraduate), carried out as one of the parameters of the Bologna process. Postgraduate education in Kazakhstan is becoming increasingly necessary, as a result of socio-economic and general cultural progress of society.

A key component of the lexical funds of Kazakh people is the knowledge of foreign languages as means of international business communication. Master's and doctorate's educational program includes training abroad,

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participation in international conferences, which determines the need foreign language skills at a sufficient level.

Thus, the priority way of selection of candidates for admission to programs of master's degree and PhD became the foreign language skills. For admission to Master's degree and PhD program in Kazakhstan it is necessary to pass two entrance exams: (1) on foreign language proficiency and (2) on profiled subject.

The entrance examination on foreign language is carried out centrally in the form of testing since 2004 by the National Testing Center (NTC). The purpose of testing is to evaluate the level of language proficiency, determine the level of communicative skills of listening and reading comprehension as well as structuredness speech.

Level of foreign language knowledge among applicants increases each year; and in order to meet the modern needs, the system of admission to Master's degree and PhD program is developed, updated and improved, taking into account the particularities of educational system of the country and the international system as a whole. With this aim the Memorandum of Understanding in the field of educational testing was concluded between the National Testing Center of the Ministry of Education and Science of RK and Educational Testing Service (ETS) Global BV.

The first step towards the integration of Kazakhstan to international language certification was the approbation which was held in November, 2012 in accordance with procedure adopted in the world educational system.

88 of Master's students studying by state educational order from national universities with different levels of English who had been involved at the entrance examination in accordance with the NTC procedure in 2012, took part in the approbation (Table 1).

Table 1 Comparative Table of Approbation and Entrance Examination Results

| Traditional Mark | Credit System Marks | Number of Applicants | CEFR Levels | | | | |
|------------------|---------------------|----------------------|--------------------------|------------|------------|------------|----------|
| | | | Without Skills, A1 < 337 | A2 337-459 | B1 460-542 | B2 543-627 | C1 > 627 |
| "2" | F (< 0-49) | 0 | 0 | 0 | 0 | 0 | 0 |
| "3" | D (50-54) | 0 | 0 | 0 | 0 | 0 | 0 |
| | D+ (55-59) | 4 | 0 | 4 | 0 | 0 | 0 |
| | C- (60-64) | 2 | 0 | 2 | 0 | 0 | 0 |
| | C (65-69) | 3 | 0 | 3 | 0 | 0 | 0 |
| | C+ (70-74) | 11 | 1 | 9 | 1 | 0 | 0 |
| "4" | B- (75-79) | 11 | 0 | 9 | 2 | 0 | 0 |
| | B (80-84) | 21 | 1 | 13 | 7 | 0 | 0 |
| | B+ (85-89) | 13 | 2 | 4 | 4 | 3 | 0 |
| "5" | A- (90-94) | 19 | 0 | 7 | 11 | 1 | 0 |
| | A (95-100) | 4 | 0 | 0 | 2 | 2 | 0 |
| Total | | 88 | 4 | 51 | 27 | 6 | 0 |

Comparative analysis of the testing showed that the language testing of NTC allows determining applicants who know the language by minimum requirements of foreign language skills, as 84 (95.4%) of applicants confirmed their entrance examination results.

However, NTC tests don't differentiate applicants by the level of language proficiency, NTC tests' results demonstrate overestimation, possibly due to differences of test structures.

NTC tests are concentrated on following blocks:

Listening – 20%, Lexico-Grammer test – 50%, Reading – 30%,

ETS tests:

Listening – 36%, Structure and writing speech – 28%, Reading – 36%.

This analysis showed the need in changing of test structure and specifications taking into account the requirements of international standards in accordance with level ranking of languages (Table 2). In accordance with the suggestions of experts, changes in test structure and specifications should be carried out in stages for each type of speech activity.

Table 2 Comparative Table of Test Structures

| Test Structures | Total Number of Items | Listening | | | | Lexico-Grammer test | | Reading | | | |
|-----------------|-----------------------|---------------|----------------------------|-----------------------|----|---------------------|----|---------------|----------------------------|-----------------------|----|
| | | Num. of Texts | Num. of Items of each Text | Overall Num. of Items | % | Num. of Items | % | Num. of Texts | Num. of Items of each Text | Overall Num. of Items | % |
| | | | | | | | | | | | |
| TOEFL ITP | 140 | 4 | 12-13 | 50 | 36 | 40 | 28 | 4 | 12-13 | 50 | 36 |
| NTC 2004-2012 | 100 | 4 | 5 | 20 | 20 | 50 | 50 | 4 | 7-8 | 30 | 30 |
| NTC 2013 | 100 | 4 | 7-8 | 30 | 30 | 40 | 40 | 3 | 10 | 30 | 30 |
| NTC 2014 | 100 | 4 | 8 | 32 | 32 | 32 | 32 | 3 | 12 | 36 | 36 |

In 2013, the changing of the test structure carried out in favor of Listening block.

Also the requirements for items formation were changed, included items on comprehension (understanding) of the text and items with examples of usage of grammatical structures (in accordance with international language standards).

The experimental innovation became a linking estimation of test results, the appropriate to credit scoring, with international language standards (CEFR): A1–Beginner, A2–Elementary, B1–Intermediate, B2–Upper-intermediate, C–Advanced. According to the credit scoring, the applicant shows a minimal knowledge of the subject in the recruitment of 50% points. To agree with test standards, this test was deliberately made easier at 0.6 logits.

Testing goals and tasks were changed. Now during the entrance exams is determined a language proficiency level. Test is same for all preparation levels (Master's degree, PhD Program).

The technology to hold entrance examination is to hold the centralized testing of applicants throughout Kazakhstan having the NTC as a controlling center.

So, in 2013, due to a large number of applicants the entrance exams on language proficiency were conducted in five days. Number of applicants who did not get a threshold score was 25.42%.

Entrance examination holding technology allows conducting statistical analysis according to classification of applicants on training forms, the status of educational organization, as well as the language context.

According to Table 3, over 90% of test takers were applicant son Master's degree program. Moreover, according to testing results the percentage of test takers who did not get threshold scores, for all forms of training is in the range of 23.7% to 25.5%.

Over 95% of test takers passed an examination on English language, about 3% of applicants on German and less than 0.5% of applicants on other languages (Table 4).

Table 3 Distribution of Applicants According to Their Entrance Examination Results in 2013 in the Context of Preparation Form

| Preparation Form | Number of Applicants | | Scores | | | | | | | |
|-------------------------|----------------------|------|-------------|------|--------------|------|--------------|------|---------------|-----|
| | Participated | % | 0–49 «2» | | 50–74 «3» | | 75–89 «4» | | 90–100 «5» | |
| | | | Pers. | % | Pers. | % | Pers. | % | Pers. | % |
| Master's degree program | 27826 | 90.1 | 7108 | 25.5 | 12643 | 45.4 | 6372 | 22.9 | 1703 | 6.1 |
| Residency | 987 | 3.2 | 234 | 23.7 | 489 | 49.5 | 223 | 22.6 | 41 | 4.2 |
| Postgraduate Military | 12 | 0.04 | 3 | 25.0 | 6 | 50.0 | 3 | 25.0 | 0 | 0.0 |
| PhD program | 2072 | 6.7 | 508 | 24.5 | 833 | 40.2 | 637 | 30.7 | 94 | 4.5 |
| Total | 30897 | | 7853 | 25.4 | 13971 | 45.2 | 7 235 | 23.4 | 1838 | 5.9 |

Table 4 Distribution of Applicants According to Their Entrance Examination Results in 2013 in the Context of Language

| Language | Number of applicants | | Scores | | | | | | | |
|----------|----------------------|------|---------------|------|---------------|------|--------------|------|---------------|------|
| | Participated | % | 0 – 49 «2» | | 50 –74 «3» | | 75-89 «4» | | 90-100 «5» | |
| | | | per. | % | per. | % | per. | % | per. | % |
| Kazakh | 115 | 0.4 | 0 | 0.0 | 13 | 11.3 | 57 | 49.6 | 45 | 39.1 |
| Russian | 71 | 0.2 | 3 | 4.2 | 10 | 14.1 | 25 | 35.2 | 33 | 46.5 |
| English | 29541 | 95.6 | 7 582 | 25.7 | 13 531 | 45.8 | 6 787 | 23.0 | 1 641 | 5.6 |
| German | 1073 | 3.5 | 247 | 23.0 | 378 | 35.2 | 332 | 30.9 | 116 | 10.8 |
| French | 97 | 0.3 | 21 | 21.6 | 39 | 40.2 | 34 | 35.1 | 3 | 3.1 |
| Total | 30897 | | 7 853 | 25.4 | 13 971 | 45.2 | 7 235 | 23.4 | 1 838 | 5.9 |

In accordance with the Rules, Kazakh and Russian language exams are taken by non-residents of Kazakhstan.

For improving items and bringing them in line with international language certification the test results are analyzed.

Statistical analysis of the test results in 2013 compared with 2012 showed the influence level of changes in test structure and specifications (Figure 1).

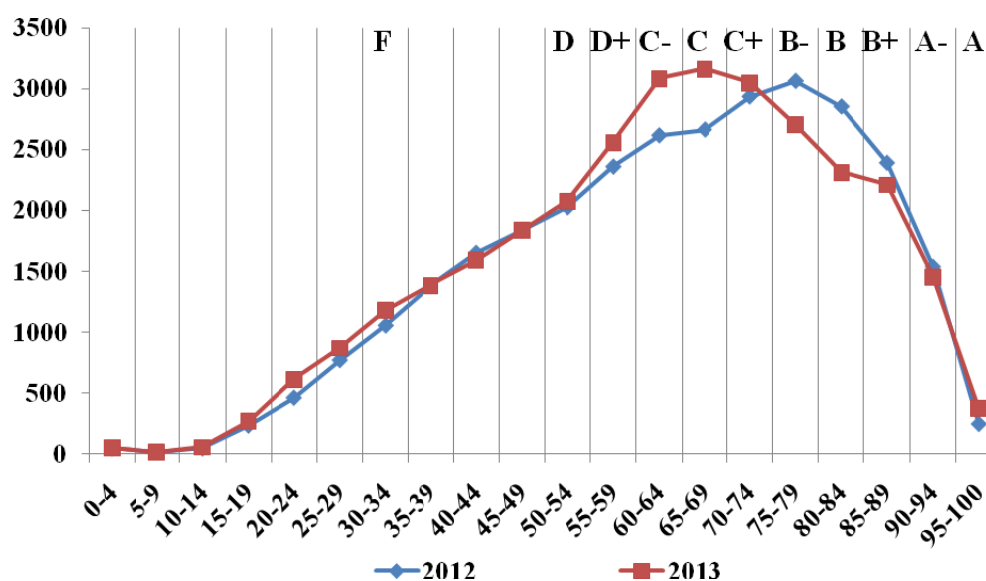


Figure 1 The Distribution of Applicants According to Scale of Credit Scoring for Years 2012 and 2013

According to the comparative data in Figure 1 can say that the amendments have been smooth. Percentages of applicants who did not get threshold scores (50 points) in the previous and current year are relatively equal, while the number of applicants who have got in the limit of 75–89 points has decreased, which indicates more reliable evaluation of the knowledge level of applicants.

Figure 2 shows the distribution of applicants according to the score in CEFR system in 2013. The necessary and sufficient requirements to each level are defined in the test specification.

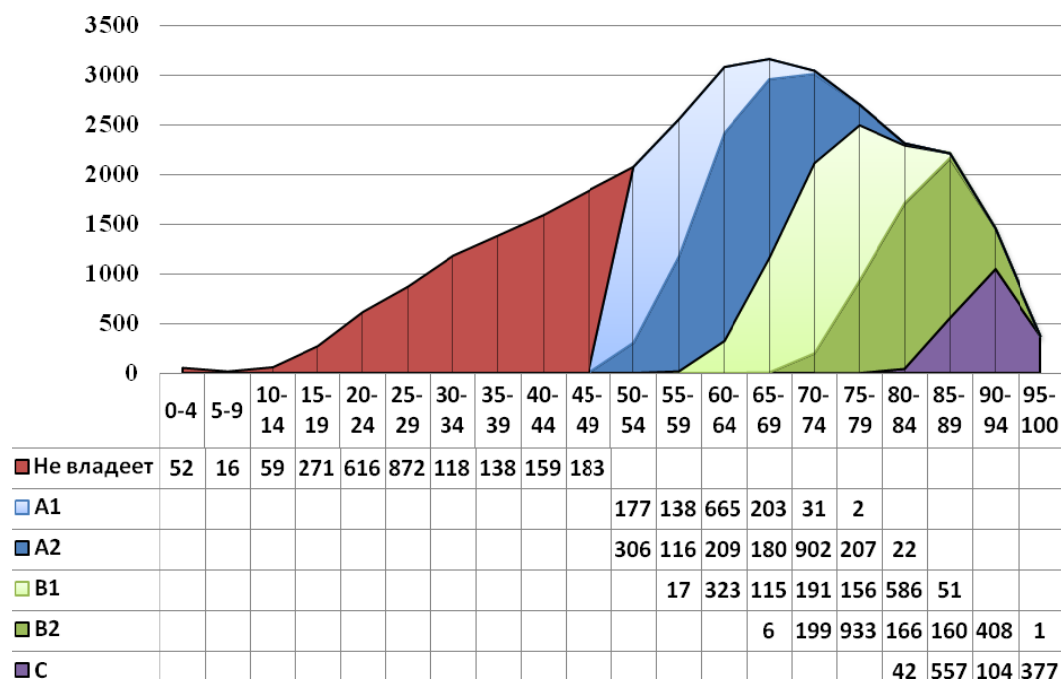


Figure 2 The Distribution of Applicants According to Language Skills in 2013

This graph shows that applicants who have got the same points can be assigned different levels of language proficiency. This evaluating the results of testing takes into accounts the difficulty level of each item. For example, the A2 level will be appropriated to an applicant if he correctly answers items of the A1 and A2 levels and items of other levels has slight number of the correct answers. If the applicant correctly answers items of different levels, but doesn't show the minimum requirements of one of the levels, he will be appropriated a lower level.

All test variants were analyzed to assess the suitability of the test as a measuring tool. The software RUMM 2020 (Rasch Unidimensional Measurement Models) was selected as the analyzing tool.

Conducted analysis revealed the following:

- test reliability;
- compatibility test set;
- variation range of items' difficulty level;
- gradation of items distribution by difficulty;
- compliance of test's difficulty level with the applicants' ability level.

For example, the main characteristics of one of the variants is given, which was used in one of the universities in 2013 (Table 5).

Table 5 The Main Characteristics of Test's Variant

| Indicators | Value |
|--|-----------------|
| Person Separation Index | 0.95 |
| Cronbach Alpha | 0.951 |
| Total-Item Chi Square | 229.75 |
| degrees of freedom | 200 |
| Chi Square Probability | 0.07316 |
| The variation range of applicants' ability level | -1.758.. +3.356 |
| The variation range of items' difficulty level | -3.982.. +2.434 |
| Intermediate level of applicants | 0.611 |

The diagram of compliance is given between the ability level of applicants and the difficulty of items. The compliance degree of testing data by the Rasch model is determined on basis of Chi-square statistics (Figure 3).

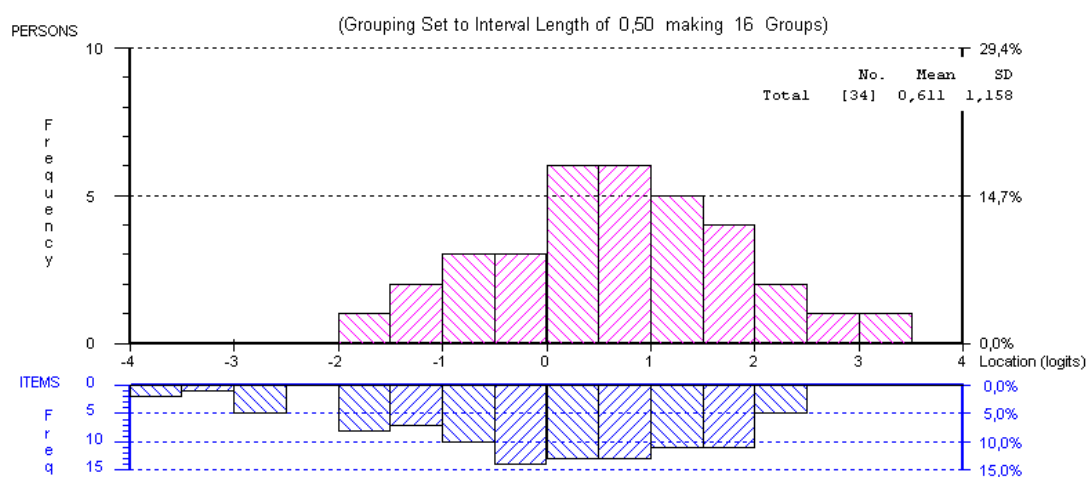


Figure 3 Person-Item Location Distribution

Thus, results of executed work can be judged according to statistical analysis, which showed that systematization on difficulty levels of items had a positive impact on increasing the reliability and objectivity of assessing the knowledge level of applicants.

The statistical analysis showed the objective distribution of applicants' results according to language proficiency level, which confirms the appropriateness and quality of the transition to the international language standards.

The Republican workshop-session on the international language certification in conditions of Kazakhstan was held in November 2013, with participation of educational-methodical board representatives from all of the higher educational institutions of the country and international experts in the field of language testing. At this session the NTC was offered to continue work on transition to the international language certification by means of bringing in changes into structure and test specifications.

Regularity of introduction of innovations in language testing determines purposeful training of applicants for examination, makes the favorable environment for their further training in specialized language which will open them access to global professional field.

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