

Distance Foreign Language Testing as a Part of Digital Education in a Non-linguistics University

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Abstract— The article is devoted to distance foreign language testing for full-time, correspondence and distance students of a non-linguistics University and school-leavers. Distance foreign language testing is viewed as a part of digital education as it is performed digitally; can control the levels of students' assimilation of language material and simultaneously make them revise and learn certain language phenomena in a digitised form; makes the learners use different digital devices stationary, mobile and combinations of both and realizes digitised connections with other subjects of the curriculum. The classification of testing forms, its advantages and perspectives for further development are given. The results achieved in the experimental work the aim of which was to compare the popularity of traditional and distance testing with students, the efficiency of their fulfilment of digitised and printed tasks, the results of learning achieved traditionally and with the help of technical devices are described. On the basis of many years of practicing mentioned above distance testing the author comes up to the conclusion of its efficiency and compatibility with traditional and high-technological methods of teaching foreign languages and possible successful implementation in non-linguistics universities.

I. INTRODUCTION

Testing in its traditional form has been used in the system of foreign language learning in non-linguistics Universities for a long time and needs no comment. Distance testing is comparatively new in the field and remarks should be made to clarify some points of its usage.

First of all it should be mentioned that distance testing in foreign language learning has survived plenty of changes in attitude: from the peaks of popularity to almost complete oblivion and condemnation.

In the early days of its development i.e. in 50-s – 70-s of the previous century distance testing with the help of technical devices was meant as a means of control for very wealthy people who possessed very expensive at that time necessary equipment and wanted to be taught and checked by the best teachers at suitable for them periods of time. Later on technologies developed, equipment became cheaper and consequently more affordable for ordinary people who were eager to learn a foreign language but didn't have either time or money to become full- or part-time University students.

In 1990-s distance testing became specially popular in Russia with its vast territory, plenty of small towns and villages situated far from educational centres but populated by people for whom getting higher education (foreign language included in the curriculum) was of vital importance. Interest in a foreign language was gradually increasing as Russia became a state with broad economic and scientific international connections and the majority of students simply couldn't

imagine their future without taking part in such international cooperation, interconnection and inclusion in the world-wide

process. For them mastering a foreign language was inevitable. What is more, they comprehended Internet as an indispensable part of their lives and were infatuated with it.

All the factors mentioned lead to the rise of popularity of distance testing which began to be viewed not only as a means of control but also as a means of learning a foreign language.

Then the euphoria ended and the situation with distance foreign language testing quickly changed to the worst as students appeared who were not exactly after knowledge but after the diploma and all known in 1990-s technical devices didn't allow to perform the testing quickly and visually enough not to let a person being tested use somebody else's results (in other words the teacher couldn't be sure that his/her students got their results independently without resorting to the experience of their friends, acquaintances or relatives).

Distance testing was forgotten and of no interest until 2010-s with their splash of high technologies. New generations grew in a digitised environment. Their mode of life is closely connected with state-of-the-art new and modernised already known devices. Teacher's opportunities for checking authenticity of their students' results have improved. Students' interest in mastering a foreign language (not simply getting a certificate of having learned it) is growing permanently.

That is why we can speak of a new rise of distance testing at a new stage of foreign language learning in the system of digitised education.

II. IMPLEMENTATION OF METHODS OF FOREIGN LANGUAGE DISTANCE TESTING IN A NON-LINGUISTICS UNIVERSITY

A. Classification of the types of foreign language distance testing.

Speaking of foreign language distance testing as a part of digitised education it is worthwhile classifying it according to the communications means used [5], [6], [10]: i.e. they can be stationary and mobile.

Stationary are performed with stationary PC, interactive whiteboard, satellite TV, e.t.c.

Mobile tests are meant for mobile devices. There can also be combinations of both types. The classification can be observed clearly in Fig.1.

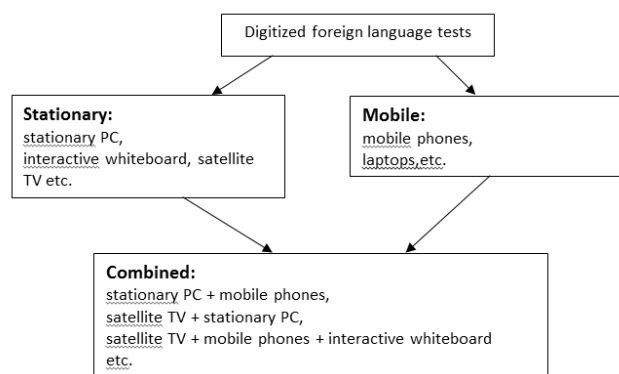


Fig. 1. Classification of the types of foreign language distance testing

Distance testing with the help of stationary PC is widely used. It differs from the traditional one (performed with the help of printed materials) in centralization, specific structuring of the testing materials and (in the majority of cases) absence of a face-to-face contact with the teacher before the final exam. To its main drawbacks can be referred the impossibility to guarantee that the learner fulfils the test himself (without visual control on the part of the teacher even within limited time periods he can use any resources while being tested and attract his friends, relatives, acquaintances, colleagues and so on to the process). Its main advantage is centralization and up-to-date structuring of the material that appeals to students' vision of the process. This type of distance testing refers to well developed and thoroughly studied methodologically.

Other stationary types are based on the use of stationary video-techniques, interactive whiteboard, satellite TV etc. and are supposed to be of greater interest for the learning process but depend on material well-being of both the University and the learner as they can only function at the identical levels of technical equipment of all the participants.

Mobile types of distance testing are cutting-edge. That is, they are extremely new and popular with young people, comparatively cheap (all the youths possess one, two or more mobile devices and have no problems using them both in their everyday lives and for learning purposes), allow to perform the tasks everywhere (in the classroom, café', in the office etc.) within very limited time-slots which creates a comfortable and secure atmosphere, there is always enough space for them etc. But they are not as yet well researched and are seldom used in the educational process at Russian Universities.

Combined distance foreign language testing is still more rare. Its use is limited by students' access to an interactive whiteboard, satellite TV etc. Its methodological basis is not well developed.

Baring in mind all said above in connection to different types of distance foreign language testing the main problems of the article should be to research the tendencies for the growth in their popularity with the learners, find out the main advantages and disadvantages of all of the types and the main ways of implementation distance testing in a non-linguistics University.

B. Research questions, purpose of study, research methods..

Research questions were as follows:

- developing methodological materials and textbooks for different types of distance foreign language testing;
- determining the most productive ways of their use in the learning process;
- getting the results on the experimental basis;
- finding out students' attitude towards new systems of testing;
- making some conclusions concerning further development of foreign language distance testing as a part of digitised education.

The purpose of study was to improve the foreign language testing in non-linguistics Universities (for full time, correspondence and distance students and school leavers) by introducing advanced technologies and develop recommendations for its most effective use.

Research methods used were experiment, observation, description, analysis, comparison.

C. Main ways of practical use of foreign language distance testing

In the Moscow technical University of communications and informatics testing based on communication means is suggested both for full-time students (when the testing material is delivered from the Testing Centre simultaneously to different classrooms in different University buildings), for distance learning students fulfilling the tasks within the time-limit at home or in the office, for correspondence students following the same rules as the distance ones and also for school-leavers who want either to find out how well they know a foreign language (a preliminary testing before entering the University) or to pass the entrance exam digitally (in this case an electronic exam is largely similar to the Single State exam)[1].

Some advantages of such testing have been established [4], [6], [7], [13], [17], [21]. They are as follows:

- 1) automatic data collection;
- 2) possibility of a detailed analysis of results achieved by the students while learning a foreign language;
- 3) back-up communication allowing to get information about the quality of tasks fulfilment immediately;
- 4) measurement of real time the learner worked at the test;
- 5) individualization of the control process which excludes the possibility of any interference or results falsification;
- 6) increase of students' interest in the results;
- 7) development of students' ability to analyse their work and view it critically;
- 8) determination of preferred testing strategies;
- 9) possibility to discuss results achieved in the Internet with other participants later on and compare them for better understanding of personal problems and dynamics of success in foreign language learning.

The latest researches show that pre-testing training of the testing model activates the students and improves their results [11], [13], [14], [15], [19]. That's why the Foreign languages department of the Moscow technical University of communications and informatics has worked out a methodological textbook "Types and methods of control of foreign language assimilation in communications Universities" (Moscow: Print, 2017; the author: T.V.Kozhevnikova) [2], [3], [18] based on the textbook "English for communications students" (issue 8; Moscow: KnoRus, 2017; the author: T.V.Kozhevnikova) where all types of tests suggested to the students at all main stages of control are included. Methodological textbook is issued in a traditional form and its electronic version is placed on the University site for students to practise electronically.

Thus the University students have unlimited preliminary training on the basis of both computerized and printed materials. To be passed or get a satisfactory mark at the exam it is necessary to fulfil 51% of the test correctly. When mass distance testing was performed for the first time the novelty factor for full time students was taken into account and to encourage them and stimulate their activity the "+1" coefficient was used for the final results. Later on the "+1" coefficient was removed as after having been engaged in the preliminary training the majority of students achieved the minimal acceptable result.

On the completion of the test both students and teachers are able to analyse the results on the basis of their tests printouts received from the Testing Centre on request.

After that the teacher suggests a strategy for working at mistakes. Those that are common to the majority of testing participants are worked at in the classroom or distantly (in most cases with the help of mobile devices or combinations of stationary and mobile devices). Those only typical of the minority of students are worked at individually i.e. every such student receives from the teacher a set of tasks to do at home. Later on the results are checked by the teacher (either traditionally or electronically).

Preliminary tests for school-leavers are structurally similar to those suggested at the centralized testing but are based on the material assimilated in the secondary school.

Tests suggested at the centralized testing are compiled according to the acting Curriculum of the subject "Foreign language", samples shown on the site of the Federal service for supervision in the sphere of education and science and also on the basis of foreign Universities experience [9].

Tests for school-leavers used for centralized computerized testing at the entrance exams are similar to the Single State Exam and are suggested with the instructions shown on the screen in Russian to help cope with technical difficulties [1].

School-leavers' results also can be printed out but are analysed and worked at by school-leavers themselves.

Both students' and school-leavers' tests are based on multiple choice. The suggested tasks formulations are as follows: fill in the gap; choose a replica (answer, statement,

utterance, heading etc.); define if the statement is ... ; point out ...) .

According to the experience of many years distance testing contributes greatly to the improvement of foreign language teachers' work during exams and tests periods, guarantees objectivity and impartiality of students' marks, secures unanimity of methods for complying testing materials, helps achieve unification of the learning process, fully corresponds to youth's vision of the digitalisation and stimulates them to further learning of a foreign language (see Fig.2 and Fig.3).

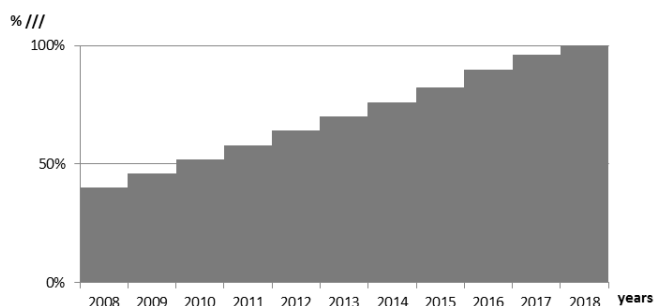


Fig. 2. Results of centralized distance foreign language testing (2008-2018)

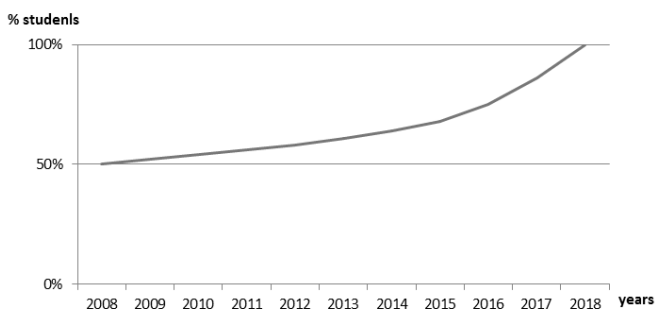


Fig. 3. Percentage of students engaged in centralized foreign language testing (2008-2018)

Still the fact that centralized computerized distance testing modernizes teacher's activity and is highly appreciated (according to the data of the fulfilment progress) by youths [4; 12; 20] doesn't mean that computerized tasks are easier to cope with than traditional ones. Researches have shown [11; 14; 15; 16] that not all students feel positive for the digitalisation of the learning process. Very often it can be explained by the lack of their technical experience or a low level of technical devices in their possession.. Students who have been dealing with state-of-the-art computers (stationary or mobile) since their childhood perceive computerized foreign language tests as a quite natural network interaction. On the other hand those who have lesser access to high tech devices in other places except the University cope with the tests not so well even having a positive psychological setting. Best results are achieved when the testing technology is simple. For example, when the learner only should "click" the correct answer in the multiple choice the possibility of test successful fulfilment is higher than when he should put in the number of the right (from his point of view) answer or type it in (one word or a sentence).

Mobile and combined testing doesn't have such a long history in the Moscow technical University of communications and informatics as the centralized one (see Fig.4). Still some progress here can be observed.

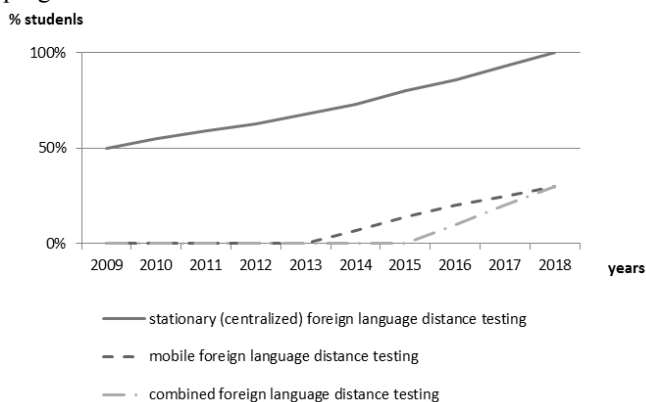


Fig. 4 Percentage of students engaged in different types of foreign language distance testing (2009 - 2018)

Let's start with mobile testing. Suffice it to say that every student of the University possesses not less than two or three mobile devices. That's why they have a material basis for working on-the-move.

The experience of fulfilling purely mobile tests is based exclusively on ones sent to the Foreign languages department from Colchester language school (Essex University), English First and written by the department of foreign languages creative tests with tasks connected with students locations.

As far as foreign tests are concerned they are sent directly to students' mobile devices within a limited period of time and checked immediately. Correct answers are not supplied though the results may be printed out later on with the help of stationary devices. For these tests to be completed a face-to-face contact is needed. While contacting the teacher in Colchester (when the students of the additional educational program go there to brush up their language) the learners analyse their mistakes, perform similar tasks in the classroom and have a talk with the tutor. If the tests are sent from the English First subsidiary in Moscow to the ordinary students the face-to-face contact takes place in the subsidiary office or at the Foreign languages department. The procedure is similar to the previous one.

Creative tests with tasks connected with students' location are of more interest. In this case students are to send to the teacher correct data of their exact locations and in return corresponding lexical-grammatical tests (connected with landscapes, sightseeing, etc.) are sent to them to be fulfilled within a limited time slot. In addition they are to write a small text using a given structural scheme and certain word combinations and grammatical structures. The results are sent to the teacher's mobile device, analysed by him, evaluated (in percentage of correct answers) and later on discussed in the classroom (traditionally and with the help of technical devices).

The popularity of mobile foreign language distance testing is growing, tests are becoming more and more complicated,

teacher's tests bank is getting larger and larger which contributes greatly to the improvement of his work. [24,25]

Combined foreign language distance testing is the newest form of testing but it is gaining more and more interest on the part of the learners rather quickly (see fig4). It is due to the fact that the combination of state-of-the-art devices (mobile devices, interactive whiteboard, satellite TV, stationary PC) appeals to the youth's mode of life, diversifies the learning process, modernises and visualises it in many ways. [22]

Example of testing may be as follows:

-in the classroom students watch the BBC program through the satellite TV and a corresponding test (composed by the teacher) to be done within a time slot is distributed to their mobiles, then the results are shown on the interactive whiteboard and discussed by all the participants;

-some pieces of the BBC news are recorded by the teacher, preserved on the stationary computer and sent to the students' mobile devices for them to compile tests then these tests are fulfilled by the whole group on the interactive whiteboard;

-students are asked to choose from the papers of a foreign scientific conference (the materials are placed on the stationary computer) three reports coinciding with their fields of speciality, prepare short presentations on their bases and compose a test for the fellow students to be done either in the classroom or at home using mobile devices;

-students fulfil ready-made tests from specialised whiteboard materials in the classroom, are asked to compose similar ones and send them to each other to complete; the results are discussed in the classroom;

-students are asked to find professionally oriented videos in the Internet, demonstrate them to the group in the classroom or distribute through mobiles and compose tests on the bases of the videos; the peculiarity of such testing is that they are compiled by both learners who selected the videos and who received them and are done in turn.

The list can be continued, methods of combined testing may be enlarged and improved but there are grounds to believe that this type of testing has the future as it more than all others contributes to the educational process. Working in its mode students not only control their level of mastering the language but also enlarge their knowledge of a would-be profession, foreign countries and their Motherland, science and technology. They have a splendid opportunity to communicate with each other virtually and directly, train and create the tasks.

To work at mistakes and improve the process of assimilating a foreign language different methods are used at the Foreign languages department. This is one of the ways of making testing educational.

During two years an experiment was taking place at the Department the aim of which was to work out the most productive models for foreign languages assimilation and testify the advantages of computerised technologies making, at that, distance foreign language testing an indispensable part of learning

During the experiment students were working with identical teaching materials traditionally (on the basis of printed ones) and using technical devices. Teaching materials remained stable. Conditions of their comprehension were changing (from traditional printed books or from the screen). All the materials corresponded to one and the same working plan and were meant for working at the language material and speech skills in different kinds of foreign language activity.

Within four semesters each group of learners was fulfilling identical exercises (mainly test-type) using either traditional printed materials (experiment №1), or specialised materials for distance learning (experiment №2), or working with stationary computers both in the classroom and at home (experiment №3), or using combinations of different technical devices: stationary computer, interactive whiteboard, mobile devices, etc. (experiment №4). Their achievements in lexis are marked “a”, grammar – “b”, language skills – “c”. Thus 12 experiments were performed: 4 – where lexis was observed (experiments 1a, 2a, 3a, 4a); 4- where observations were made at grammar (experiments 1b,2b, 3b, 4b) and 4 – where achievements in foreign language skills were taken into consideration (experiments 1c, 2c, 3c, 4c). Five groups of students took part in the experiment. They are identified as A, B, C, D, E. Each group was considered experimental. The order of the experiments, their distribution within the semesters and groups participation can be seen in table I. Thus invariable conditions were structures of the lessons within four semesters, working plans, teaching materials, the aims of the lessons, ways of evaluating the results, the learners, the teachers. The invariable conditions were ways of introducing the materials to the learners (using traditional printed materials, specialised distance learning materials, stationary computer, mobile devices, interactive whiteboard, satellite TV, etc.).

Experimental teaching was organized the following way:

let’s give short characteristics to the variable and invariable conditions of the experiment.

Learners – first year students of technical faculties of the Moscow technical University of communications and informatics. Their starting level was determined by the first testing which was identical for all the participants and was introduced either traditionally (experiment №1) or with the help of technical devices (experiments №№2 -4). The number of students in each group was 9 – 18 learners.

TABLE I. EXPERIMENTAL RESULTS

Semesters	Type of the experiment			
	1a,b,c	2a ,b, c	3a, b,c	4a, b, c
I	gr. A, C	gr. B, D, E	gr. B, D, E	gr. B, D, E
II	gr. A, C	gr. B, D, E	gr. B, D, E	gr. B, D, E
III	gr. A, C	gr. B, D, E	gr. B, D, E	gr. B, D, E
IV	gr. A, C	gr. B, D, E	gr. B, D, E	gr. B, D, E

Group A – 30% – «5», 30% – «4», 40% - «3»;
 Group B – 50% – «4», 50% – «4»;
 Group C – 20% – «5», 30% – «4», 50% - «3»;

Group D – 35% – «5», 40% – «4», 25% - «3»;
 Group E – 50% – «5», 20% – «4», 30% - «3»;

Type of learning	Mark		
	5	4	3
Traditional correspondence (% of marks)	25	30	45
Distance (% of marks)	45	37	18

Teaching materials – textbook “English for communications students”[T.V. Kozhevnikova, Moscow, KnoRus, 2012], textbook “Audiocours for communications students”[T.V. Kozhevnikova , Moscow, KnoRus, 2012] and methodological materials of the Foreign languages department. All the tasks were meant for assimilating lexis, grammar, language and speech skills.

While selecting the tasks the following requirements were observed:

- 1) 1)availability of technical devices for their implementation;
- 2) 2)accuracy and simplicity for understanding;
- 3) 3)clearness of the response reaction;
- 4) 4)possibility of control and regulation of the speed of tasks introduction on the part of the teacher;
- 5) 5)possibility of registration of the learners’ achievements and their awareness of such;
- 6) 6)variety of tasks potentially interesting for the learners;
- 7) 7)easiness of transferring from one task or a complex of tasks to another .

Besides exercises he observed lexis and grammar were present in texts for reading. The amount of words read in the texts accounted to 24000 of words.

Organization of the experiments –experimental teaching was organized the following way:

-before each experiment a pre-experimental testing was performed; in all 12 pre-experimental testings (before experiments №№1a,b,c,2a,b,c,3a,b,c,4a,b,c accordingly).

-during the experiments testing devoted to the assimilation level of new material took place;

-right after the experiment comprehension testing was done ;its aim was to find out how exactly the observed lexis and grammar were understood by the learners and what was the degree of their automatic recognition and also what was the development level of language and speech skills;

-some months after the experiment the participants were engaged in a postponed testing the aim of which was to determine how well the learnt lexis ,grammar and language and speech skills were preserved with the learners.

All the tests mentioned were similar to pre-experimental in their structure and ways of introduction . The objects of testing were the same .All testings were performed 12 times. All of them corresponded to the State standards, the Curriculum, the working plans. All of them were based on the same textbooks and methodological materials. In all the experiments texts and sentences were always new for the learners.

The distribution of the results achieved by the students during all types of experimental testing can be seen in Fig.5.

According to the table the best results belonged to group B, but according to the pre-experimental testing that group possessed better knowledge of English initially.

The averaged results of different types of learning are shown in fig.5.

From the averaged results of different types of learning shown in Fig. 5. it is clear that technically assisted teaching methods are more effective than traditional ones. It goes without saying that if digitized technologies are used skillfully they'll correspond to the main tendencies of the development of Russia as they modernize the educational process, turn it into the part of social life.

III. CONCLUSION

The results achieved in centralized computerized distance testing can be considered reliable: practically they all corresponded to the students' qualitative performance indicators during the term or the year. This fact combined with the mentioned above positive features of computerization and centralized control of the learners' mastering of a foreign language gives us the grounds to speak of potential viability of centralized distance testing, its complete compatibility with traditional learning media and possibility of use of such methodology in different non-linguistics Universities [3], [6].

Further steps in its development may be such as allowing students to have a second attempt of being tested; creating specialized programs for working at mistakes (at first – common, than – individual) in the classroom under the teacher's guidance and independently (both in the University and at home) and also programs which are simultaneously exercises in different kinds of speech activity; using centralized distance testing for diagnostic purposes determining students' level of mastering a foreign language, dividing them into groups accordingly and supplying them with necessary materials for independent out-of-the-classroom work.

The created system of distance centralized testing allows any changes and additions on the part of the teachers engaged in it. That's why if the acting Curriculum of the subject "Foreign language" is preserved or undergoes minor changes they needn't write completely new tests. It'll be enough just to modify the old ones, change the order of their introduction to the learners and make some additions according to the teacher's wish. This'll make tests unrecognizable to the students and suitable for multiple use. Gradually the amassed "testing bank" will fully compensate for the time and effort spent.

Mobile and combined types of testing are undergoing the early stages of their implementation but it is clear that they are gaining in popularity. They possess all the advantages typical of centralized distance testing through stationary PC (and can be combined with them) but in addition they help create a comfortable atmosphere for their presentation and fulfilment, help shy students cope with tasks as the participants are not

intimidated by other directly, are easier to fulfil technically as the learners work with their own familiar for them devices, the learning environment reminds real life (digital technologies are implemented in natural for the students ways and are perceived not as leaning but as ordinary activity). [23,24]

Nowadays when the population of Russia possess about 80 000 000 of smartphones a digitized image of a student is going to appear for whom the product of the technology (not the technology itself) is of great interest. In our case such a product is methodology of distance foreign language testing and its mobile and combined versions should be thoroughly researched and widely spread through non-linguistics Universities

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