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Didactic situation of test levels in the 9-th class

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Abstract: *The aim of the present study is to trace and analyze the geography and economics content of the world in the 9th grade and to try to doctrally place test variants for verification, diagnosis and input level analysis. Whether to interpret some didactic aspects of developing and selecting test tasks and their application.*

The current issue of control and evaluation issues in the context of the new legal framework in Bulgarian education - a new Pre-school and School Education Act and the relevant state standard for assessment annexed by Ordinance No. 11 of 01.09.2016 on the assessment of the learning outcomes of students. The new strategies are important for the continued application of control in today's geographic and economics learning process and the directly related assessment and evaluation.

Emphasis is placed on the possibilities of applying test tasks and questions that allow to diagnose and evaluate the students' knowledge and skills at the entry level as well as the degree of the quality of knowledge and skills and the ability to apply them in solving test tasks.

How to develop, select and apply geographic and economics test assignments and issues in the 9th grade at the entry level on the specific subject is the subject of the research study in this report.

Keywords: *didactic situation, test variants*

Introduction

Education is a leading factor in the social and economic development of each nation. In most governments' education programs, education is among the main national priorities. Policy development, monitoring and evaluation of investment in the education sector require a careful reading of students' abilities. One of the important elements in training is the evaluation of the results. The assessment of the knowledge, skills, attitudes and values of young people formed in the process of their schooling becomes more and more global. This ensures that the knowledge and skills acquired in one's own country can be used in all other countries, and thus the global labor market.

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The timeliness of the issues of control, evaluation and testing is in the context of the new regulatory framework in Bulgarian education. Control is a kind of activity, a procedure in the technological cycle related to the analysis of results. The requirements for this activity are justified by an individual, systematic, objective, varied, all-round process.

Evaluating pupils' learning outcomes, in the form of input and output levels, is of paramount importance for the implementation of control in the modern geographic and economics learning process and the directly related assessment and evaluation.

Theory and methodology

Emphasis is placed on the possibilities of applying test tasks and questions that allow to diagnose and evaluate the students' knowledge and skills at the entry level as well as the degree of the quality of knowledge and skills and the ability to apply them in solving test tasks.

The main objectives of the entry level in the 9th grade are the diagnosis of the individual achievements and progress of the student and the determination of his / her learning needs and of the areas in need of support. On this basis, two test variants are developed. The main features of the test, the stages of test creation and test tasks are respected. Depending on the purpose of the specific study, the approach to analyzing the results is determined [1].

The objectives of this study are:

1) Analysis of national standards, curricula for compulsory education in terms of requirements for the diagnosis of students' achievements at the entry level in geography and economics.

2) Trace and analyze the curriculum content of geography and economics of the world in the 9th grade and attempt to place test options for verification, diagnosis and input level analysis.

3) Interpret some didactic aspects of developing and selecting test tasks and their application.

4) Diagnosis of the individual achievements and progress of the student and determination of his or her learning needs and the areas in need of support.

5) Indication of reasons and necessary measures for overcoming the negative results;

6) Marking capabilities for synchronization and alignment of entry level test types applicable to all types of schools in the country.

The subject of the study is two test variants, such as forms of geography and economics assessment (compulsory preparation) at the entry level in the 9th grade in a targeted, content and procedural plan, which allow to diagnose and evaluate the students' knowledge and skills at the entry level and the extent of the quality of knowledge and skills and the ability to apply them in solving test tasks.

Methodology and toolbox of the study.

- a theoretical analysis of the literature on the problem;
- analysis of the educational documentation on the topic, the activity of the teacher and the students;
- system-structured analysis of the subject's curriculum;
- a test method for determining students' learning levels of the main elements of the curriculum;
- pedagogical experiment - founder and trainer;
- statistical methods for processing and presenting the results obtained.

The results of the study are presented in the following ways:

• tabular - through frequency tables with shaped diagrams according to accepted criteria and indicators;

• graphical - by circular and columnar diagrams;

• by calculating the relative share and referencing the number of students to the relevant indicators for the individual criteria.

The pedagogical experiment as a finding and learning sub-topic on the topic is realized with students in three 9th grade classes / 9a - humanities with advanced foreign language learning; 9b - natural sciences with advanced foreign language learning; 9 c - physical education and sport without intensive and extended foreign language learning at the Vassil Levski High School in the Dulovo district of Silistra.

The publication of the book of Thorndek, 1904, „Introduction to the Theory of Measurement in Psychology and Social Sciences“, is the beginning of science „testicles“. Thorndek and Hagen, 1969, call

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this didactic test that is designed to show what the individual has learned to do as a result of planned and already acquired experience or training, often provided at school.

The test is a system (and not just a set of) questions and tasks whose composition and structure reflect a particular strategy that is subordinate to the specific features of the test. Connects the essence of the test with the system of evaluation of the result of its execution and in this sense it calls for the development of a standard-full and correct way of its implementation. A test that does not have a standard, according turns into a simple control activity.

In Bulgarian pedagogical and psychological-pedagogical literature, a wider penetration of testing practices in the assessment of education is at the beginning of the 21st century.

There are a number of unfavorable practices in the field of testing: 1. Mass production of tests for all ages students in all subjects, many of which do not conform to the basic rules and requirements for constructing a test. 2. The disseminating view that not only writing tests, but all assessment activity in education can be done „by everyone". 3. Misunderstanding the importance of analyzing the test results and the „conclusions" they make. These conclusions are related to the fact that in none of the Bulgarian universities there is no specialty / specialization such as testology. On the one hand, this is the reason we still have very few experts in the field of theology. Even more important for Bulgarian education at the present moment is that the practice requires more and more people to be involved in the test assessment, which somehow have to fill the gap in their knowledge on these issues.

Piryov, 1988 calls pedagogical tests those that measure learning outcomes in terms of acquired knowledge and skills.

Each well-prepared test must have the following main features: objectivity, reliability, validity, comparability, economy, utility, impartiality [2].

Didactic tests are varied and can be divided into:

►Depending on the purpose, the tests are for preliminary, current, final control;

►Depending on the degree of applicability - not standardized and standardized;

►The way of implementation - written, oral, motor;

►According to the standard - normative and criterion (oriented towards the aim of the curriculum);

►The way of holding - individual and collective;

►According to the nature and difficulty of the tasks in the test: reproductive, reflexive and reproductive-reflexive;

►According to the way the response is coded: with a graphic code, a numeric code, an alphanumeric code;

►According to the way the answer is given: structured, unstructured and mixed;

►Constructions can be: simple (with one-sided tasks) and complex (combined), traditional and non-traditional;

►According to its structure - ordinary and test system. Test systems are two types - test battery and test ladder;

►According to their content, the tests are for achievement, speed and attitude. Achievement tests diagnose the level of training, speed tests not only report proper performance, but also time, relationship tests reveal the attitude of research to knowledge, work and success;

►Adapted and computer tests [2].

According to Ruther, 1978 tests contain types of questions and tasks depending on their form, namely:

- Questions and tasks of free work - open questions and tasks;
- Questions and tasks for interpretation;
- Questions and tasks for association;
- Semi-open questions and tasks;
- Frequently Asked Questions and Questions;
- Affirmative associative issues and tasks;
- Half-open completion tasks;
- Semi-open substitution tasks;
- Semi-open self-construction tasks;
- Semi-open conversion tasks;

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- Open issues and tasks;
- Identification tasks;
- Tasks with alternative answers;
- Tasks with elective answers;
- Tasks with associative election responses;
- Tasks with associative replies for completion;
- Issues with substitute answers;
- Tasks with optional expansion responses;
- Tasks with optional referencing responses;
- Tasks with optional conversion responses;
- Tasks - Substitutes.

In the present study, instrumentation test testing is used as the main method. Testing involves designing and conducting tests to diagnose individual achievements and student progress, and to identify its learning needs and areas that need support. On this basis, two test variants are developed. In the study, criteria were selected to seek to meet the objectives and tasks set by curricula for all students [3].

In the pedagogical periodical of geographic education, the elaboration of the criterion-oriented tests for diagnosing the results of the geography education in 1983 was developed by a team of Methodists and Geography teachers in pursuance of a research program of the Scientific Research Laboratory of Pedagogical Diagnostics at Sofia University „Kl. Ohridski“ under the direction of Prof. G. Bijkov.

In geography training, tests provide a real opportunity to measure the learning outcomes of a certain learning content, but when applied not in a self-directed way, but in a system that is thoughtful, refined, didactically correct. Tests make it possible to identify and evaluate knowledge, skills and relationships of students, ie their geographical literacy, competence and established patterns of behavior.

Researchers of geography test design options recommend that certain requirements be met with regard to the issues and tasks formulated as follows:

- M. Pechevski - to be of different kind and character;
- M. Manoilova - to use a network model;
- L. Pancheshnikova - to be a system of problematic (creative) questions and tasks, which in form can be: ordinary (traditional) questions and tasks, structured tests, geographic dictations;
- R. Gaitandzhieva - to focus on the so-called criteria-oriented tests to change the check in intensive terms. Practice shows that teachers, unaware of test design requirements and development of a control and evaluation system, use a variety of didactical resources (textbooks, tutorials) and assemble a set of questions and tasks from all of them on a topic, section or course [3]. This leads to errors such as:
  - formulation of the same type of tasks (mostly at the level of knowledge);
  - Selection is from predominantly elementary or too complex questions and tasks, ie. in both versions the results are not objective;
  - Questions and tasks do not take into account the pupils' ability to perform within the timeframes of one class;
  - Evaluation criteria are incorrectly selected (most often a point system - high or low without the rating scale being consistent with% of the total score).
  - At present, the use of test questions and variants in examining and evaluating pupils' performance is a common practice. The reasons are not yet scientifically and methodologically proven. The test is standardized upon the introduction of national external evaluation and state matriculation exams in different grades (initially after 4,5,6,7 grade and 12 grade, which is abolished, now applied after 4, 7 and 12 grade and under certain school subjects are removed after 7th grade - natural sciences, social sciences!). Another leading cause is the change in the curriculum and the number of classes in the subjects, and a leading lesson subject is geography and economics. More and more universities run admission tests in paper form or in electronic form.
  - Testing as assessment and measurement procedures is not a new form and traditionally occupies a place and functions in learning.

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- The geography and economics test assignment includes:
- described educational goals;
- is part of a test variant that checks empirical, theoretical and methodological knowledge;
- is an instrument for assessing and measuring skills;
- verifies and evaluates the achievement of the pupil at a specific cognitive level;
- meets the requirements of the subject;
- meets test requirements such as reliability, validity and difficulty;
- a scale to measure;
- subject to standardization and digitization [4].

The basic framework regarding the content of the control in geography and economics education in the contemporary Bulgarian school is the normative documentation, including:

1. Pre-school and school education law
2. The National Program for Development of School Education and Pre-school Education and Training (2006-2015).
3. DOS.
4. Ordinance № 5 of 30.11.2015 for general education.
5. Curriculum and curricula.
6. Ordinance No. 3 of 2003 on the assessment system (repealed, SG No. 74 of 20.09.2016). The Ordinance shall continue to apply during the academic years 2016-2017, the school year 2017-2018, the school year 2018-2019, the academic year 2019-2020 and the 2020-2021 school year for the students under § 24, par. 2 of the Transitional and Final Provisions of the TDCA.
7. Ordinance No. 3 of 2004 on the Organization and Conduct of State Matriculation Exams (repealed, SG No. 74 of 20.09.2016). The Ordinance shall continue to apply during the academic years 2016-2017, the school year 2017-2018, the school year 2018-2019, the academic year 2019-2020 and the 2020-2021 school year for the students under § 24, par. 2 of the Transitional and Final Provisions of the TDCA.
8. Ordinance № 11 of 01.09.2016 for the assessment of the pupils' learning outcomes (in force from 20.09.2016, amended and supplemented, issue 78 of 29.09.2017).

National Program for the Development of School Education and Preschool Education and Training (2006-2015) Chapter 6. Since the school year 2006/2007 the process of introducing the tests in the Bulgarian school as a leading form of ongoing control in the process of education and at the end of each educational stage has begun. The great advantage of the test form of testing in all its variants is the ability to objectively measure the knowledge and potential of the students. Tests are a modern valuation method that is widely used in developed countries, but not with sufficient traditions in our country.

The quality control and assessment system changes in two ways:

- Development of the internal evaluation system. This implies a broad overlap of tests both in the process of assessing students' knowledge and skills during the school year, and as a form for assessing incoming and outgoing levels - measuring knowledge and skills at the beginning and end of the school year;
- Building an external evaluation system. The system includes mandatory assessment of students' knowledge and skills at the end of each educational stage (IV, V, VI, VII, X, XII grade) through national standardized exams. The examinations after the 7th and 12th grade are used not only to establish the attainment of the corresponding level of general education minimum, but also as an entrance to secondary or higher education respectively;
- Wide use of tests as a form of assessment involves the creation of a bank of questions on the various subjects and its continuous enrichment as well as the preparation and dissemination of collections and aids with test materials (only leading university authoring teams prepare and almost without analysis of the achievements results and subsequent corrections: the creation of a bank of questions turns out to be a tough and slow process during the cyclical four-year change of education minister, which does not lead to a conclusion of strategic tasks and leading ideas);
- A national educational portal is being created. It contains sample tests that are useful both in the internal evaluation process and in the preparation for external evaluation. Numerous

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test variants are also prepared in e-learning courses. The portal also contains matrices whereby teachers can develop and further develop and test their results (controversial is the result). The best tests created by teachers were approved by the Ministry of Education and Science and used as sample exams for external evaluation (only the first year 2016-2017);

- In order to ensure the technical use of tests in the training process by the end of 2006, each Bulgarian school is equipped with copying equipment for reproduction of sufficient quantity of test materials;
- Detailed consideration of questions related to the mass introduction of tests (form, timetable for testing and introduction by year and subject) is the subject of a special action plan developed by the Ministry of Education and Science;
- The introduction of a national standardized external evaluation at each stage for all pupils and the possibility of its results serving as an entrance to secondary and tertiary education is directly related to the introduction of the new educational structure. Until the introduction of a national standardized external evaluation at each stage for all pupils, the examination of the admission possibilities in the different types of schools after the 7th grade takes the form of a test;
- For the first time, it took place during the school year 2006/2007. State matriculation exams also take the form of a test. In order to enable students to get used to the test form, trial exams are organized with a portion of the students who finish the XII grade, randomly selected.

The national strategy for the development of school education and pre-primary education and training ends in 2015.

New regulatory documents are being created in the coming years, through which innovations for control and evaluation continue in the Bulgarian school.

This research study also highlights some important guidelines that are the result of the theoretical analysis and synthesis of the current methodological literature in order to justify the theoretical foundations for preparation, application of a test form for evaluation and analysis of the achieved results of the students at the entry level in 9-th grade. Extensive analysis presents as a "white" field in the theory and practice of geography and economics training the lack of a unified system of input / output assessment of students.

Practical and applied part

In the geography and economics education in the first grade / 8th grade during the 2017/2018 and 9th grade in the 2018/2019 school year, the control and assessment of the students was in compliance with the SSAA; Ordinance №5 of 30.11.2015 for general education and the state educational standard for the evaluation of the results of the education of the students according to the Ordinance № 11 of 01.09.2016 on the appraisal of the results of the students' education, in force since 20.09. 2016.

High-level control is done through traditional methods - oral and written testing.

Both standardized tests of MES-approved teaching aids and educational sites specialized in Geographical Portal are applied; Geography, 21; Geoscience; Learn; School; And more and more often, test tasks prepared by geographers and economists as their own resources.

The widest application in geography and economics training has four main forms of tests - closed, open, reconciliation tasks and establishing causal links.

Content-analysis of the curriculum of geography and economy in 8th grade.

Geography and economy education in the VIIIth grade is geared towards acquiring key competences by acquiring knowledge, skills and attitudes related to the nature of the Earth, its natural resource potential and the sustainable development of geographic space. The formation of the geographic culture of the students continues.

The curriculum of Geography and Economics for the 8th grade (general education) includes as a content of the course of study: three areas of competence: Planet Earth; Geography of nature; Geographic information that takes place through two topical topics and twenty-one subtopics.

A purposeful analysis of key themes, concepts and categories related to key competences through knowledge, skills and attitudes related to the nature of the Earth, its natural resource potential and the

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sustainable development of geographic space can be achieved through a thorough review of the current curriculum and DOC for educational contents, as well as textbooks and schoolbooks approved by the Ministry of Education and Science.

In this research study, the textbooks and school kits used in the school education system during the school year 2017/2018, approved by Order № РД09-982 / 24.01.2017 of the Minister of Education and Science, were analyzed in this report.

1.Geography and economics / printed edition with electronic version. A. Popov and colleagues. Anubis OOD 2017.

2. Geography and Economics / printed edition with electronic version. M. Rusev and team "Archimed 2" Ltd. 2017

3. Geography and Economics / printed edition with electronic version /. Penin and colleagues Bulvest 2000 OOD 2017

4. Geography and Economics / printed edition with electronic version.

M. Mandova Rushinchovska and colleagues „Pedagogog 6“ - Delev, Luizova and 2017

5. Geography and Economics / printed edition with electronic version. L. Tsankova and colleagues. Prosveta Plus EOOD 2017

6. Geography and Economics / printed edition with electronic version. S. Dermendzhieva and colleagues. Prosveta-Sofia AD 2017

In the textbook of Publishing House „Anubis“, with authors A. Popov and colleagues, the educational content was examined in 36 thematic units. The Planet Earth theme is dealt with in three subtopics. The Geography of Nature theme is discussed in twenty-nine subtopics. Early and annual review, activities and control units are provided [5].

In the textbook of Archimedes Publishing House, with authors M. Rusev and colleagues, the content of the study was studied in 36 thematic units. The theme Planet Earth is seen in four subtopics. The Geography of Nature theme is discussed in twenty-seven subtopics. Early and annual review, activities and control units are provided [6].

In the textbook of Bulvest 2000 Publishers, written by R. Penin and his colleagues, the curriculum was dealt with in 29 thematic units. The Planet Earth theme is dealt with in three subtopics. The Geography of Nature theme is discussed in twenty-four subtopics. Early and annual review, activities and control / self-testing are provided [7].

In the textbook of Publishing Prosveta, written by S. Dermendzhieva and colleagues, the content of the course was dealt with in 32 thematic units. The Planet Earth theme is dealt with in two subtopics. The Geography of Nature theme is discussed in twenty-seven subtopics. Teaching units are provided for initial and annual review activities [8].

Organization and Methodology of the Empirical Pedagogical Study of Geography and Economics in 9th grade - Entry Level.

The main objectives of the entry level in the 9th grade are the diagnosis of the individual achievements and progress of the student and the determination of his / her learning needs and of the areas in need of support. On this basis, two test variants have been developed. The main features of the test, the stages of test creation and test tasks are respected.

The pedagogical experiment as a finding and training sub-topic on the subject is realized with students in three 9th grade classes / 9a - humanities with advanced study of foreign language - 27 students; 9b - Natural Sciences with Advanced Study of Foreign Language - 26 students; 9 c - physical education and sport without intensive and advanced study of a foreign language - 25 students at „Vasil Levski“ Secondary School, Dulovo, Silistra. /in addendum/

In the present study, criteria were selected to seek to cover the objectives and tasks set by the curriculum for all students.

The control is carried out by the test method. Instruments are the tests.

For objective evaluation, we used the following criteria and metrics.

First Criterion. Depth

First Criterion Indicator: Awareness of the essential links between the studied objects, processes and phenomena - incoming test.

Second criterion. Concreteness

Second criterion metric: Reveals the specific manifestations of geographic laws - input test.

Third criterion. Operability and flexibility

Third criterion: Ability to use regularities in similar situations. Quickly find options for their application in new situations.

In search of the most appropriate method to accomplish the purpose and tasks of our diagnostic procedure, we came to the opinion to apply the following methods:

1.Elaboration of literature on the problem of criteria-oriented tests;

2.Test;

3. Mathematical-statistical analysis and methods for tabular and graphical presentation of the results.

From these methods in the diagnostic test, the test is basic and the rest are auxiliary diagnostic methods. We backtrack our test because it limits the subjective factors in checking and evaluating knowledge. In addition to providing information objectivity, it harmonizes the requirements for students and the conditions in which they work. Provides quick receipt of the required information (data). As a starting point for the preparation of the diagnostic tools, the objectives and tasks of the Geography and Economics training serve.

We apply two variants of tests. The number of tasks in both variants is 16, including the lesson learned in 8th grade – "Natural Geography of the Earth".

The pupils' tests were evaluated on the point system. For each task in a given test, a maximum number of points is specified for a well-defined task.

The scale for assessing the test results is based on the number of points and their transformation into a score (Dermendzhieva, S., etc. (2018) Geography and Economics, grade 9, Teacher's Book (P. Sabeva, P. Stoyanov, N. Nikolova, Ts. Peikova), S., Prosveta.

Diagnostic examinations take place in the regular Geography and Economics hours of the curriculum within one class. The entrance test is completed within one school hour.

With the help of the address, the students are focused on the subject, the number of questions, the type of tasks, the number of faithful answers to each task, the maximum number of points the way of marking the correct answers, the working time is communicated orally by the lecturer, at the end of the test place of results - maximum possible number of points, individual number of points on the rating scale from ... to .... points, appraisal of the student, signature of the teacher. Students learn about the content of the test tasks and work independently on the test work on all the tasks in the test, and the teacher observes discreetly their work. After the specified time, the teacher collects the checklists, indicating the criteria and metrics on which the test scores will be evaluated and evaluated. The scale is based on a number of points and transformed into a score.

We presented the results of the research on the diagnostic procedure in the following ways:

- graphical - circular and radar diagrams are used;
- By calculating and referencing the number of students to the relevant indicators for each criterion.

The results obtained from the diagnostic procedure investigated by criteria and indicators for each variant separately and then summarized on the relevant criteria only.

According to these criteria, the results of the experimental study will be systematized and processed. According to the research objectives, the following criteria for the measurement of knowledge are chosen (Table 1).

Table 1. Griteria for measuring knowledge

Criteria	**Methods of Research**	**Toolkit**
1. Depth	Testing	Test
2. Concrete	Testing	Test
3. Operability and Flexibility	Testing	Test

In line with the objectives and objectives of the present study, the following criteria for assessing the quality of knowledge and the associated skills are also considered: depth, specificity, operability and flexibility (Table 2).

Table 2. Criteria and indicators for measuring knowledge and related skills

Indicators	**Criteria**	**Quality characteristics**	**Level of formation**
Knowledge and related skills	1. Depth	Awareness of the essential connections between the studied objects, processes and phenomena	High-understanding and application of all essential links; Medically-greater part of the essential connections; A small part of the essential connections
	2. Concreteness	It reveals specific manifestations of geographic laws	A high level of ownership of the two signs from general to concrete and concrete to general Average level - possession of facts or generalized knowledge only, without the necessary skills to carry out the necessary transitions Low level - a small part of the essential connections
	3. Operability and flexibility	Skills to use the regularities in similar situations. Quickly find variants for their application in new situations	High level-true and quick application of knowledge in a familiar and unfamiliar situation Medium level - application of knowledge in familiar and in some cases - unfamiliar situations Low level-difficult to apply to a familiar and can not at all in an unfamiliar situation

Conclusion

The development, selection and application of the geographic and economics test assignments and questions in the 9th grade at the entry level on the specific topic as the subject of the research study in this report also draws the following conclusions:

1. Opportunities for the implementation of test tasks and questions that allow the diagnosis and assessment of pupils' knowledge and skills at the entry level as well as the degree of the quality of the knowledge and skills and the ability to apply them in solving test tasks;

2. In addition to the achievements and traditional ways of testing in the current pedagogical study, we also used the advantages of diagnosis using criteria-oriented tests that alter the nature of this basic task in all its aspects - both as a purpose, as both content and approaches, methods, tools;

3. The applied system of criterion-oriented tests leads to a more complete and durable learning of the learning material, activates the students, their cognitive and practical activities and improves their success rate. Thus, the main goal of pedagogical diagnosis is to outline the achievement of the objectives and tasks of the training according to the requirements of the educational documentation.

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